

(6) delivering a receiver specific datum at said interactive mass medium program output apparatus simultaneously or sequentially with said mass medium program or said data.

**Please add the following new claims:**

1118 81. (New) The method of claim 35, wherein said at least one subscriber datum is presented in said mass medium programming.

82. (New) The method of claim 35, wherein said at least one subscriber datum is displayed simultaneously with said mass medium programming.

**II. REMARKS**

**A. Introduction**

Applicants have carefully reviewed the Office Action originally issued on April 5, 2000 and have made the foregoing amendments in response thereto.

**1. Claim Accounting**

Claims 3-12, 18, 32, 35, 37, 39, 41, 45, 47-54, 59-61, 75 & 79 are amended. Claims 81 & 82 are newly presented. Claims 3-82 are pending in the application. Applicants present no new matter in the foregoing amendments. Applicants respectfully request approval and entry of this amendment.

**2. Summary of Office Action Rejections**

The following summarizes the objections and rejections of the April 5, 2000 Office Action with respect to its corresponding paragraph numbers:

Paragraph 3. Claims 3-82 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Paragraph 4. Claims 3-82 that are directed to digital related processes and apparatus, are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Paragraph 5. Claims 3-82 that are directed to data, datum, and indicia and related processes and apparatus, are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Paragraph 6. Claims 3-82 are rejected under 35 U.S.C. § 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed.

Paragraph 8. Claims 3-82 are rejected under 35 U.S.C. § 112, second paragraph, as failing to set forth the subject matter which Applicants regard as their invention.

Paragraph 9. Claims 3-82 using the terms having different descriptions from Applicants' 1987 specification and 1981 priority application, are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants' regard as their invention.

Paragraph 10. Claims 3-82 using the terms, *inter alia*, 'program' and 'programming' are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants' regard as their invention.

Paragraph 12. Claims 3-82 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Applicants' U.S. Pat. Nos. 4,694,490 and 4,704,725.

Paragraph 14. Claims 3-82 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants WO 89/02682.

Paragraph 15. Claims 3-82 that are directed to processes of controlling cable head end processes and monitoring of those processes and combined medium presentation, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Greenberg, U.S. Pat. No. 4,547,804 in view of Galumbeck et al., U.S. Pat. No. 4,725,886.

Paragraph 16. Claims 3-82 that are directed to, *inter alia*, processes of controlling broadcast subscriber stations, including decrypting, processing, storing, generation and monitoring to those processes and combined medium presentation, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jeffers et al., U.S. Pat. No. 4,739,510.

Paragraph 17. Claims 3-82 that are directed to, *inter alia*, processes of controlling cable head end processes and monitoring of those processes and combined medium presentation are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hazelwood et al., U.S. Pat. No. 4,025,851 in view of the publication "System and Apparatus for Automatic Monitoring Control of Broadcast Circuits" by Yaname et al. and Hetrich, Australian Patent No. 74,619.

Paragraph 18. Claims 3-82 that are directed to, *inter alia*, processes of controlling subscriber station processes and monitoring of those processes and of combined medium presentation and processes, are rejected under 35 U.S.C. § 103(a) as being unpatentable over either one of the common subject matter suggested by Campbell et al., (WO 81/02961, abandoned parent application no. 135,987, and U.S. Pat. No. 4,536,791), in view of at least one or more of: Breeze "Television Line 21 Encoded Information and It's Impact on Receiver Station Design"; Schnee, U.S. Pat. No. 4,290,142; and Zaboklicki, DE 2,904,891.

Paragraph 19. Claims 3-82 that are directed to, *inter alia*, either processes of controlling affiliate stations and processes and monitoring of those processes and combined medium presentation or processes of controlling subscriber stations and method and process for monitoring and providing combined medium presentations, that fall out each particular determining group members of the group of claims described in rejection above, the groups are rejected further in view of one or more of: Hazelwood et al., Yaname et al., Hetrich, Marsden, Young et al., "Journal of SMPTE" Oct. 1971, U.S. Pat. No. 3,761,888 to Flynn, U.S. Pat. No. 3,627,914 to Davis, Tunmann et al., U.K. Pat. No. 959,374 to Germany, Byloff, Chiddix, Skilton, Schiller et al., Zettl, Vikene, U.S. Pat. No. 4,547,804 to Greenberg, Jeffers et al., Diederich, Campbell et al. (WO 81/02961, abandoned U.S. application no. 135,987, and U.S. Pat. No. 4,536,791), Kazama et al., Gosch, Stern, Breeze, Barlow, Millar, U.S. Pat. No. 4,725,886 to Galumbeck et al., "CBS/CCETT North American Broadcast Teletext Specification," Zaboklicki, U.S. Pat. No. 4,064,490 to Nagel, U.S. Pat. No. 4,251,691 to Kakiyama, Hedger et al., Anderson, Gunn, Gaucher, U.S. Pat. No. 4,290,142 to Schnee et al.

Paragraphs 20-21. All claims are subject by the Office to an administrative requirement based on the nonstatutory double patenting rejection based on a judicially created doctrine preventing the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.

Paragraph 23. All pending claims are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over at least one or more of Applicants' issued patents, U.S. Pat. Nos.: 4,694,490; 4,704,725; 4,965,825; 5,109,414; 5,233,654; and 5,335,277, in view of at least one or more of: Marsden, Young et al., Flynn, Davis, Tunmann et al., Germany, Chiddix, Skilton, Schiller et al., Zettl, Vikene, Greenberg, Jeffers et al., Diederich, Campbell et al., Kazama et al., Gosch, Stern, Breeze, Barlow, Millar, Galumbeck, CBS/CETT North American Broadcast Teletext



Specification,” Zaboklicki, Nagel, Kakiyara, Hedger et al., Anderson, Gunn, Gaucher, and Schnee et al.

Paragraph 24. Rejects Applicants’ basis for amending the typographical errors in the instant specification in two places on page 37.

Paragraph 25. The oath or declaration is defective under 37 C.F.R. § 1.67(a).

**B. Summary of Claim Amendments**

Claims 3-12, 18, 32, 35, 37, 39, 41, 45, 47-54, 59-61, 75 & 79 are amended.

Claim 3 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 4 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 5 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 6 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 7 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 8 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 9 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 10 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 11 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 12 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 18 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 32 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 35 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 37 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 39 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 41 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 45 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 47 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 48 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 49 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 50 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 51 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 52 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 53 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 54 has been amended to correct an antecedent basis problem.

Claim 59 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 60 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 61 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 75 has been amended to further clarify the claim language in view of Applicants' disclosure.

Claim 79 has been amended to further clarify the claim language in view of Applicants' disclosure.

**C. Statement of Patentable Novelty under 37 C.F.R. § 1.111**

Applicants submit that the independent claims as amended include the following limitations that are not found in the prior art. These limitations show patentable novelty in view of the state of the art disclosed by the references cited and the objections made.

**Claim 3:**

receiving an information transmission from a remote station and passing at least a portion of said information transmission to said computer, said information transmission including data and at least one instruct signal;

detecting an instruct-to-select signal in said information transmission;

processing said data at said computer and selecting a plurality of subscriber data;  
storing said selected plurality of subscriber data at said memory location;  
receiving mass medium programming from a programming source and outputting  
said mass medium programming at said output device;  
selecting subscriber information to output based on said step of storing; and  
outputting at least one of a simultaneous presentation and a sequential  
presentation of said mass medium programming and said selected subscriber information.

**Claim 13:**

- (1) receiving at a transmitter station said downloadable code which is effective at at least one of said plurality of receiver stations to select said at least one subscriber datum for at least one of simultaneous presentation and a sequential presentation of said at least one subscriber datum with mass medium programming, wherein said downloadable code has a target processor to process data at each of said plurality of receiver stations;
- (2) transferring said downloadable code from said transmitter station to a transmitter;
- (3) receiving said at least one control signal at said transmitter station, said at least one control signal operating to execute said downloadable code; and
- (4) transferring said at least one control signal from said transmitter station to said transmitter and transmitting an information transmission including said downloadable code and said at least one control signal.

**Claim 17:**

- (1) identifying at least one of:
  - (a) said resource to select for at least one of simultaneous presentation and sequential presentation with mass medium programming; and

(b) said control signal which is effective to select said at least one subscriber datum for said at least one of simultaneous presentation and sequential presentation with said mass medium programming;

(2) monitoring said identified at least one of said resource and said control signal;

(3) storing a record of the use of said at least one of said resource and said control signal from said step of monitoring; and

(4) communicating information evidencing said use of said identified at least one of said resource and said control signal from said step of storing from said receiver station to the remote station.

**Claim 19:**

(1) receiving at said at least one origination transmitter station said mass medium programming to be transmitted by the remote intermediate mass medium programming transmitter station and delivering said mass medium programming to at least one origination transmitter, said mass medium programming having an instruct signal which is effective at said at least one receiver station to select said at least one subscriber datum for at least one of simultaneous presentation and sequential presentation with said mass medium programming;

(2) receiving said at least one control signal which at the remote intermediate mass medium programming transmitter station operates to control the communication of said mass medium programming; and

(3) transmitting said at least one control signal from said at least one origination transmitter before a specific time.

**Claim 22:**

(1) receiving at least one of a code and a datum at a transmitter station, said at least one of said code and said datum designating at least one of:

- (a) a product and a service offered in said mass medium programming; and
- (b) said subscriber reaction;

(2) receiving at said transmitter station an instruct signal which is effective at said at least one of said plurality of receiver stations to select said at least one subscriber datum for at least one of simultaneous presentation and sequential presentation with said mass medium programming;

(3) transferring at least one of said at least one of said code and said datum and said instruct signal to a transmitter at said transmitter station at a specific time; and

(4) transmitting said at least one of said at least one of said code and said datum and said instruct signal from said transmitter station.

**Claim 27:**

(1) receiving at one of a broadcast transmitter station and a cablecast transmitter station at least one instruct signal which is effective at said at least one of said plurality of receiver stations to select said at least one subscriber datum for at least one of simultaneous presentation and sequential presentation with mass medium programming;

(2) transferring said at least one instruct signal from said one of said broadcast transmitter station and said cablecast transmitter station to a transmitter;

(3) receiving at least one control signal at said one of said broadcast transmitter station and said cablecast transmitter station, wherein said at least control signal identifies at least one specific receiver station device to which said at least one instruct signal is addressed; and

(4) transferring said at least one control signal from said one of said broadcast transmitter station and said cablecast transmitter station to said transmitter, said one of said broadcast transmitter station and said cablecast transmitter station one of

broadcasting and cablecasting said at least one instruct signal and said at least one control signal to said at least one of said plurality of receiver stations.

**Claim 35:**

outputting television programming that promotes mass medium programming, said interactive television viewing apparatus having an input device to receive input from a subscriber;

prompting said subscriber during said television programming whether said subscriber wants said mass medium programming promoted in said step of displaying, said interactive television viewing apparatus having a memory for storing at least one of a code and a datum;

receiving a reply from said subscriber at said input device in response to said step of prompting said subscriber, said interactive television viewing apparatus having a processor for processing said subscriber reply;

processing said reply from said step of receiving said reply and selecting at least a portion of said at least one of a code and a datum designating said mass medium programming, said interactive television viewing apparatus having a transmitter for communicating information to a remote site;

communicating said selected at least a portion of a code and a datum to said remote site, said interactive mass medium output apparatus and said remote site including a network having a plurality of transmitter stations;

organizing in said network, at least a first signal which is effective at said interactive television viewing apparatus to deliver said at least one subscriber datum for presentation with said mass medium programming, said interactive television viewing apparatus having a receiver for receiving said first signal from said remote station;

delivering said at least said first signal at said interactive television viewing apparatus; and

outputting said at least one subscriber datum in said presentation with said mass medium programming on the basis of said at least said first signal.

**Claim 39:**

outputting mass medium programming that promotes a specific fashion of presenting information to one of complete and supplement said mass medium programming, said interactive mass medium programming output apparatus having an input device to receive input from a subscriber;

prompting said subscriber during said mass medium programming whether said subscriber wants said information to one of complete and supplement said mass medium programming presented in said specific fashion promoted in said step of displaying, said interactive mass medium programming output apparatus having an output device for outputting information in said specific fashion;

receiving a reply from said subscriber at said input device in response to said step of prompting said subscriber, said interactive mass medium programming output apparatus having a processor for processing said subscriber reply and controlling delivery of said mass medium programming in response to instructions;

delivering said instructions at said interactive mass medium programming output apparatus in response to said step of receiving said reply, said instructions controlling said interactive mass medium programming output apparatus;

processing said instructions from said step of delivering, said instructions effective to select said at least one subscriber datum for presentation with said mass medium programming; and

presenting said information to one of complete and supplement said mass medium programming in said specific fashion on the basis of said instructions.

**Claim 43:**



detecting one of a presence and an absence of one of a broadcast control signal and a cablecast control signal;  
inputting an instruct-to-react signal to a processor based on said step of detecting;  
controlling said processor to output specific information in response to said instruct-to-react signal; and  
selecting said at least one datum for at least one of simultaneous and sequential presentation with mass medium programming on the basis of information received from said processor based on said step of controlling said processor.

**Claim 47:**

receiving a data transmission from a remote data source and passing said data transmission to said computer;  
processing said data transmission at said computer and selecting one or more data of interest;  
storing said selected one or more data of interest at said memory location;  
receiving mass medium programming from a programming source and outputting said mass medium programming at said output device;  
selecting designated information to output, said designated information being the product of processing at least a portion of said selected data; and  
outputting a simultaneous or sequential presentation of said mass medium program and said designated output.

**Claim 55:**

receiving at a transmitter station downloadable code which is effective at a receiver station to select and store one or more data for subsequent processing or presentation during the course of a mass medium program, said downloadable code addressed at each of said plurality of receiver stations to said processor;

transferring said downloadable code from said transmitter station to a transmitter;  
receiving said at least one control signal at said transmitter station, said control signal operative at a receiver station to execute said downloadable code; and  
transferring said at least one control signal from said transmitter station to said transmitter, and transmitting an information transmission comprising said downloadable code and said at least one control signal.

**Claim 59:**

identifying a resource to select for subsequent presentation of a mass medium program or a control signal which is effective to select information from one or more processed and stored data for presentation during the course of a mass medium program;  
monitoring said resource or said control signal;  
storing a record of the use of said resource or said control signal from said step of monitoring; and  
communicating information evidencing said use of said resource or said control signal from said step of storing a record from said receiver station to said remote station.

**Claim 61:**

receiving mass medium programming to be transmitted by the remote intermediate mass medium programming transmitter station and delivering said mass medium programming to at least one origination transmitter, said mass medium programming having an instruct signal which is effective at said receiver station to select information from one or more processed and stored data for presentation during the course of a mass medium program;  
receiving one or more control signals which at the remote intermediate mass medium programming transmitter station operate to control the communication of at least one of said mass medium programming and said instruct signal; and

transmitting said one or more control signals to said transmitter before a specific time.

**Claim 64:**

receiving a first code or first data at a transmitter station, said first code or data designating at least one of said subscriber response and a product or service offered by said mass medium programming presentation;

receiving at said transmitter station a first instruct signal which is effective at said at least one receiver station to select and store one or more second data received in an information transmission for subsequent processing or presentation during the course of said mass medium programming presentation;

transferring said first code or first data or said first instruct signal to a transmitter at said transmitter station at a specific time; and

transmitting said first code or first data or said first instruct signal from said transmitter station.

**Claim 69:**

receiving at a broadcast or cablecast transmitter station a first instruct signal which is effective at said at least one of a plurality of receiver stations to select and store one or more data for subsequent processing or presentation during the course of a mass medium program;

transferring said first instruct signal from said transmitter station to a transmitter;

receiving one or more first control signals at said transmitter station, said control signals addressing said first instruct signal to said processor at said at least one of a plurality of receiver stations; and

transferring said one or more first control signals from said transmitter station to said transmitter, said transmitter station broadcasting or cablecasting said first instruct signal and said one or more first control signals to said plurality of receiver stations.

**Claim 77:**

displaying a first mass medium program that promotes first data, said interactive mass medium program output apparatus having an input device to receive input from a subscriber;

prompting said subscriber during said first mass medium program to provide subscriber input if said subscriber wants said first data promoted in said step of displaying, said interactive mass medium program output apparatus having an output device for outputting said first data;

receiving a reply from said subscriber at said input device in response to said step of prompting said subscriber, said interactive mass medium program output apparatus having a processor for processing said subscriber reply and controlling delivery of said first data;

delivering instructions at said interactive mass medium program output apparatus in response to said step of receiving a reply, said instructions controlling said interactive mass medium program output apparatus;

processing said instructions from said step of delivering, said instructions effective to select and store second data to be used as a source for subsequent processing or presentation of said first data during the course of a second mass medium program; and delivering said first data on the basis of said instructions.

**D. Response to Allegation of Defective Oath/Declaration**

The Examiner asserts that the oath or declaration is defective (Office Action at 149-150.) The Examiner asserts that the instant application is a continuation-in-part of Application No. 113,329, filed August 30, 1993. Thus, the Examiner requires a new oath or declaration that acknowledges the duty to disclose to the Office all information known to Applicants to be material to patentability which occurred between the filing date of the prior application and the filing date of the instant application. Applicants note that the disclosure as filed May 22, 1995 is identical to the disclosure of Application No. 113,329. Applicants properly filed the instant application under the provisions of 37 C.F.R. § 1.60 as in effect on May 22, 1995. Rule 60 provided conditions under which an Applicant may omit signing a new oath or declaration in a continuation application. Applicants respectfully submit that they have fully complied with the provisions of Rule 60 as in effect upon filing of the instant application. Accordingly, Applicants request that the requirement for a new oath or declaration be withdrawn. Notwithstanding the above, should the Examiner maintain the requirement to file a new oath or declaration, Applicants respectfully request that the requirement be held in abeyance until allowable subject matter is indicated as provided under 37 C.F.R. § 1.111.

The Examiner addresses the preliminary amendment filed May 22, 1995, which substituted on page 1 a paragraph under 35 U.S.C. § 120 including references to related applications. This amendment included the statement: "This is a continuation of application serial no. 08/113,329, filed August 30, 1993, herein incorporated by reference in its entirety." The Examiner apparently believes this statement introduced new matter into the specification. As the document attempted to be incorporated by reference is an *identical* specification to the specification of the instant application, the Examiner's basis for this position is not entirely clear to Applicants. However to advance the prosecution of this application Applicants request that any alleged new matter be canceled by canceling the phrase "herein incorporated by reference in its entirety" from page 1.

**E. Response to Objection to the Specification**

The Office Action states, “The instant specification is objected to because applicants are changing, some +18 years after making the ‘81 disclosure, the original written description.” (Office Action at 8 & 149.)

The amendment changes page 37, lines 23-25, of the specification to read:

Controller, 39, 44, or 47, is preprogrammed to receive [units] words of signal information, to assemble said [units] words into signal [words] units that subscriber station apparatus can receive and process, and to transfer said [words] units to said apparatus.

(Additions underlined, deletions bracketed.)

Applicants submit that this amendment corrects an inadvertent error made in preparation of the specification as filed. The amendment includes no new matter. Applicants respectfully request that the Examiner withdraw the objection for the following reasons.

The amended language describes that aspect of the invention in which signal words are received and assembled into signal units. The assembly of signal words into signal units is described consistently throughout the specification in the manner effected by the amendment. As the amendment merely clarifies the disclosure, the amendment introduces no new matter.

The specification as filed, on page 14, lines 23-25, describes, “discrete words . . . that receiver apparatus must assemble in order to receive one complete instruction.” A signal unit is defined as “one complete signal instruction.” (Spec. at 14 ll. 26-27.) Thus, words must be assembled to create a signal unit. The specification consistently discloses that signal words are received and assembled into signal units.

Further, the specification consistently refers to signal words as the basic information block from which other information units are formed. The specification at page 65, lines 34-35, states; “Each message is composed in a whole number of signal words.” “Said information consists of a series of discrete signal words.” (Spec. at 70 ll.

28-29.) “[S]aid given signal word is an EOFs WORD and may be part of an end of file signal.” (Spec. at 71 ll. 5-7.) “[T]o detect those particular uninterrupted series of EOFs WORDs that constitute end of file signals.” (Spec. at 74 ll. 11-12.) “For example, end of file signals could include the signal word preceding said uninterrupted sequence.” (Spec. at 82 ll. 23-25.) Signal words are formed into commands and other signals throughout the specification.

In the recent Office Action, the sentence on page 15, lines 4-6, of the specification is relied upon as evidence that the amendment is new matter. (Office Action at 8 & 149.) The sentence reads, “Signal words may contain parts of signal units, whole signal units, or groups of partial or whole signal units or combinations.” This statement simply describes the circumstance in which a higher level word could contain a lower level unit. Obviously, this statement does not contradict the prior statement that discrete *words must* be assembled to obtain a signal *unit*. As signal words are disclosed as being assembled into signal units, the amendment cannot contain new matter, regardless of the other variations disclosed in the specification. The statement relied upon by the Examiner actually supports the conclusion that the amendment does not introduce new matter.

*In Personalized Media Communications, L.L.C. v. International Trade Commission*, No. 97-1532 (Fed. Cir. Jan. 7, 1999), the U.S. Court of Appeals for the Federal Circuit construed claim 35 in U.S. Patent No. 5,335,277 (the ‘277 patent). The ‘277 patent issued to Applicants on August 2, 1994, from a specification identical to the specification filed in the instant application. In construing the claims of the ‘277 patent, the Court concluded that the prosecution history of the ‘277 patent did not prevent the term “information of a selected television unit” from reading on channel and time information. The Court thus addressed the meaning of the term “selected television program unit.” The Court noted that “a selected program unit” is a particular television program, such as Wall Street Week. The Court did not address the meaning of the terms “signal unit” or “signal word.” No reasoning set forth by the Court conflicts with

Applicants' assertion that the specification discloses that signal units are assembled from signal words.

Applicants maintain that the amendment to the specification filed February 18, 1999, corrects an obvious error in the specification as originally filed. The amended language describes the assembly of signal words into signal units. The assembly of signal words into signal unit is described at page 14, lines 23-27, of the specification. Therefore, the amendment does not include new matter. Accordingly, Applicants request that the objection to the specification be withdrawn.

**F. Response to Rejections under 35 U.S.C. § 112**

**1. Response to Rejections under §112, first paragraph**

**a) Response to Written Description Rejections**

**(1) The Office Action Fails to Establish a Prima Facie  
Rejection Under the Written Description Requirement of  
35 U.S.C. § 112**

In the Office Action, the Examiner rejects claims 3-82 under 35 U.S.C. § 112, first paragraph for incorporating subject matter not described in the specification as filed in such a manner as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, were possessed of the claimed invention. (Office Action at 8.) Applicants firmly believe that the instant specification and respective priority documents, all of which are substantially identical, each describe the subject matter of the pending claims. Thus, in Applicants' view, the pending claims fully comply with the requirements of the first paragraph of 35 U.S.C. § 112. Accordingly, Applicants respectfully request the withdrawal of the rejections of claims 3-82 under 35 U.S.C. § 112, first paragraph.

The Examiner notes that the instant specification does not include the exact words and phrases of the disclosure of Applicants' parent Application No. 317,510 (the '81



disclosure.) (Office Action at 3.) The Examiner argues that since Applicants successfully assert that the '81 disclosure supports the pending claims and the '81 disclosure is not duplicated verbatim in the instant specification then it follows that the instant specification does not support the pending claims. The Examiner assumes that the subject matter in the '81 disclosure that is not duplicated verbatim within the instant specification is omitted from the instant specification. This assumption is incorrect. Applicants maintain that, although the '81 disclosure is not included in identical words in the instant specification, the subject matter of the '81 disclosure is specifically included in the instant specification.

“The function of the description requirement is to ensure that the inventor had possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him.” *In re Wertheim*, 541 F.2d 257, 262, 191 U.S.P.Q. 90, 96 (C.C.P.A. 1976). Applicants rely on the filing date of November 3, 1981. On this date, Applicants filed Application No. 317,510, now issued as U.S. Patent No. 4,694,490 (the '490 patent). The specification of the '490 patent (the '81 disclosure) clearly demonstrates that Applicants had possession of the subject matter presently claimed.

“[T]he PTO has the initial burden of presenting evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims.” *Id.* at 263, 191 U.S.P.Q. at 97. The Examiner has failed to meet this burden. The record of the prosecution of the instant application fails to include any reasons why persons skilled in the art would not recognize from the specification that Applicants invented the invention defined by the pending claims. The Examiner merely states, at page 15 of the Office Action, that the “instant '571 disclosure has not been found to describe the alleged '81 support ‘ . . . in such full, clear, concise, and exact terms . . . ’ as is required under the law of 35 U.S.C. 112 1st paragraph.” The Examiner also provides a list of claim phrases that are deemed to lack support (Office Action at 8-75). This list includes practically all phrases from nearly all the pending claims and amounts

to an unsubstantiated assertion that the pending claims as a whole are unsupported under the written description requirement of 35 U.S.C. § 112, first paragraph. The Examiner has failed to present evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims.

The outstanding rejection under the written description requirement is merely a blanket, unsupported statement that the pending claims fail to meet the requirements of 35 U.S.C. § 112, first paragraph. Because the Examiner includes no reasons for the rejection, the only manner for Applicants to respond is to exhaustively demonstrate where each and every limitation in the pending claims is found in the specification without regard to how clearly the specification may show each limitation to those skilled in the art. However in order to advance the prosecution of the instant application, Applicants submit herewith, Appendix A, reciting specification support for each claim limitation to the instant specification at to the parent 1981 priority application.

**(2) Applicants' Summary and Description of Integration of the Instant Specification**

Each manifestation of Applicants' claimed invention, regardless of how the manifestation may be described in the specification, is a single embodiment of the invention. Thus, the specific support provided for each claim is by definition from within a single embodiment.

Applicants acknowledge that there are numerous embodiments of the presently claimed invention described in the specification. Applicants' specification is a single cohesive document with each successive section and example extending and developing the preceding disclosure. The various disclosures, examples, and subsystems disclosed within the specification are clearly intended to be integrated into general working systems, methods and apparatus. Applicants' specification is very carefully constructed to provide clear and unequivocal contextual relationship between the various inventive concepts, processes and apparatus that Applicants disclose.

At the outset, Applicants focus on the importance of *integrating* functionalities and state:

It is the object of this invention to unlock this great potential in the fullest measure by means of an *integrated system* of programming communication that joins together all these capacities most efficiently.

(Spec. at 3 ll. 30-33)(emphasis added).

In “Background of the Invention” (Spec. at 1-11), Applicants list a multitude of problems and limitations in the prior art for which this integrated system provides valuable solutions. Applicants *also introduce focal opportunity*:

Today great potential exists for combining the capacity of broadcast communications media to convey ideas with the capacity of computers to process and output user specific information. One such combination would provide a new radio-based or broadcast print medium with the capacity for conveying general information to large audiences--e.g., “Stock prices rose today in heavy trading,”--with information of specific relevance to each particular user in the audience--e.g., “but the value of your stock portfolio went down.” (Hereinafter, the new media that result from such combinations are called “combined” media.)

Unlocking this potential is desirable because these new media will add substantial richness and variety to the communication of ideas, information and entertainment. Understanding complex subjects and making informed decisions will become easier.

(Spec. at 2 ll. 8-24.)

Applicants explicitly acknowledge that to succeed in the fullest measure means solving many technical problems as well as providing for a broad spectrum of subscriber information demands and equipment capacities:

To unlock this potential fully requires means and methods for combining and controlling receiver systems that are now separate--television and computers, radio and computers, broadcast print and computers, television and computers and broadcast print, etc.

But it requires much more.

To unlock this potential fully requires *a system with efficient capacity* for satisfying the demands of subscribers who have *little receiver apparatus and simple information demands* as well as subscribers who have *extensive apparatus*

*and complex demands.* It requires capacity for transmitting and organizing vastly more information and programming than any one-channel transmission system can possibly convey at one time. It requires capacity for controlling intermediate transmission stations that receive information and programming from many sources and for organizing the information and programming and retransmitting the information and programming so as to make the use of the information and programming at ultimate receiver stations as efficient as possible.

(Spec. at 2 l. 25 through p. 3 l. 8)(emphasis added).

To disclose how the integrated system overcomes the identified limitations, solves the problems, and realizes this potential fully, requires *step-by-step teaching* of separate elements – methods as well as apparatus – of Applicants’ disclosed system. At each new step, the *contextual relationship* of the new teaching to earlier teachings *is explicitly stated*. Applicants highlight below how this step-by-step teaching carries the relationships of the various separate elements throughout the disclosure.

**(a) “One Combined Medium” (pages 19-28)**

In a section, (Spec. at 19-28), entitled “One Combined Medium,” (Spec. at i l. 16 and p. 19 l. 5), which focuses on the subscriber station of Fig.1, Applicants begin by teaching “a *video/computer* combined medium,” (Spec. at 19 l. 6)(emphasis added). A local image – Fig. 1A (*See* Spec. at 25 ll. 9-14) – is provided at the subscriber station and combined with a remotely supplied video image – Fig. 1B (*See* Spec. at 25 ll. 30-33) – in order to deliver a combined image of Fig 1C (*See* Spec. at 26 ll. 8-15). (Simultaneously, user specific local images are provided at other subscriber station and combined with the remotely supplied video image – (*see*, specification at page 26 lines 16-19.)

(As an example of Applicants’ step-by-step teaching approach, not until a section entitled “Audio Overlays and Other Overlays,” which begins on page 463, are Applicants prepared to focus on Fig. 7D and teach “a radio/computer combined medium,” (Spec. at 464 l. 6), or teach “a broadcast print and computer combined medium,” (Spec. at 466 l. 20), or focus on Fig. 7E and teach “the full combined medium of television and computers,” (Spec. at 468 ll. 10-11).

In the “One Combined Medium” section, Applicants disclose concepts of “a combining operation” and “synchronization”. For example: “subscriber station apparatus ... execute *a combining operation in synchronization....*” (Spec. at 26 ll. 21-22)(emphasis added).

Applicants also teach *order of operations*. For example, one operation. (Spec. at 24 ll. 5-27), may provide the local image—Fig. 1A—at the subscriber station; a different operation, (Spec. at 26 ll. 4-11), may deliver the combined image—Fig. 1C. (“One Combined Medium” also discloses that a third operation, (Spec. at 27 ll. 3-7), may terminate delivery of the combined image.)

More broadly, in “One Combined Medium” Applicants teach *important concepts regarding instructions* and, *most importantly, timing*. For example:

Decoder, 203, is **preprogrammed** to detect digital information .... Microcomputer, 205, is **preprogrammed** ... to respond ... to *instruction signals* embedded in the ... programming transmission.  
(Spec. at 21 ll. 14-24)(emphasis added).

In said series in full--and in any one or more subsequent series of instructions--*particular instructions are separated, as may be required, by time periods when no instruction* that controls the microcomputer, 205, of any station *is transmitted* which periods allow sufficient time for the microcomputer, 205, of each and every subscriber station *to complete functions* controlled by previously transmitted instructions and commence waiting for a subsequent instruction, in a waiting fashion well known in the art, before receiving a *subsequent instruction*.  
(Spec. at 22 ll. 9-18)(emphasis added).

*... an instruction ... causes* subscriber station apparatus to execute a combining operation in *synchronization ....*  
(Spec. at 26 ll. 21-22)(emphasis added).

In addition, personalized programming is displayed *only when* it is of specific relevance to the conventional television programming of said combined medium. In the example, each subscriber views a graphic presentation of his own portfolio performance information *as soon as* it becomes specifically relevant to graphic information of the performance of the market as a whole. Prior to its time of specific relevance, no personalized information is displayed (despite the fact that said graphic information of the performance of the market as a whole is

displayed). And said personalized information is displayed *only for so long as* it remains specifically relevant. *As soon as* its specific relevance terminates, its display terminates.

(Spec. at 27 ll. 21-33)(emphasis added).

In the “One Combined Medium” section, Applicants demarcate a critical type of instruction with a definition.

Hereinafter, an instruction ... that causes subscriber station apparatus to execute a combining operation ... is called a “combining synch command.”

(Spec. at 26 ll. 20-23)(emphasis added).

Furthermore, in “One Combined Medium,” Applicants teach a temporal relationship of combining synch commands that have specific functionalities. A *first combining synch command*, (See Spec. at 24 ll. 5-27 and p. 26 ll. 23-28), causes the local image—Fig. 1A—to be provided at the subscriber station. A *second combining synch command*, (See Spec. at 26 ll. 1-8 and 20-23), causes display of the combined image—Fig. 1C. (Furthermore, a *third combining synch command*, (See Spec. at 27 ll. 3-7), terminates display of the combined image.) In their step-by-step teachings, Applicants *provide clear contextual pertinence of subsequent teachings by making explicit reference to* the “One Combined Medium” disclosure, and especially by *establishing the temporal relationships of subsequent teachings* to the Fig.1C combining and the functionalities provided by these combining synch commands.

**(b) “The Signal Processor” through “The Normal Transmission Location” (pages 28-86) and “The Preferred Configuration of Controller, 39, and SPAM-Controller, 205C.” (pages 156-162)**

In the specification at pages 28-86 and pages 156-162, Applicants teach apparatus and signaling techniques that are *used throughout the remainder of Applicants’ disclosure*. Applicants teach Signal Processor, (Spec. at 28-34 and Fig.1); Signal Decoder, (Spec. at 34-38 and Figs.2A-2C); and Signal Processor System, (Fig.2D), apparatus. *Applicants also teach in detail the controller* (Spec. at 156-162 and Fig.3A)

*apparatus of Signal Decoders* (e.g., controller, 39, in Fig. 2A). Applicants teach signaling techniques in sections entitled “The Composition of Signal Information ... Commands, Information Segments, and Padding Bits,” (Spec. at 43-49), The Organization of Message Streams ... Messages, Cadence Information, and End of File Signals,” (Spec. at 59-69), “Detecting End of File Signals,” (Spec. at 69-84), and “The Normal Transmission Location,” (Spec. at 84-86).

(c) **“Operating Signal Processor Systems ... Introduction”  
through “Operating Signal Processor Systems ... Signal  
Record Transfer” (pages 86-278)**

At specification pages 86-278, Applicants teach methods of operating the signal processing apparatus of pages 28-86 and 156-162 explicitly within the context of the “One Combined Medium” disclosure. For example:

Five examples illustrate methods of operating signal processing system apparatus. Each focuses on subscriber stations where the signal processor system of Fig. 2D and *the combined medium apparatus of Fig. 1* share apparatus and operate in common. Fig. 3 shows one such subscriber station.

(Spec. at 86 l. 32 through p. 87 l. 2)(emphasis added).

All five examples describe signal processing variations that relate to *the Fig. 1C combining of “One Combined Medium.”*

(Spec. 87 ll. 30-32)(emphasis added).

Each example focuses on the processing of the three signal messages of the *Fig. 1C combining*. The information of said messages include three combining synch commands and one program instruction set. The first message is of the information associated with the *first combining synch command*. Said first command has a “01” header, an execution segment, and a meter-monitor segment of six fields. Said command is followed by an information segment that contains said program instruction set, and said information segment is followed by an end of file signal. Said first command addresses URS microcomputers, 205, and causes said computers, 205, to load and run the program instruction set transmitted in the information segment.

(Spec. at 89 ll. 3-16)(emphasis added).

The second message is of the information associated with the *second combining synch command*.

(Spec. at 90 ll. 4-5)(emphasis added).

The third message is of the information associated with the *third combining synch command*.

(Spec. at 90 ll. 28-29)(emphasis added).

Repeatedly throughout each of the five examples, reference is made to pertinent “One Combined Medium” disclosures. For example, in Example #1, (Spec. at 93-143), Applicants state:

#### OPERATING SIGNAL PROCESSOR SYSTEMS ... EXAMPLE #1.

The first example elaborates on the Fig. 1C combining described above in “One Combined Medium” and focuses on the operation of decoder, 203, SPAM-controller, 205C, and microcomputer, 205, on the execution of controlled functions, and on the the use of cadence information to organize signal processing. The example begins as divider, 4, starts to transfer to decoder, 203, in its outputted composite video transmission, the embedded binary information of the first message.

(Spec. at 93 ll. 20-29.)

As described in “One Combined Medium” above, loading and running said program instruction set causes microcomputer, 205, (and URS microcomputers, 205, at other subscriber stations) to place appropriate Fig. 1A image information at particular video RAM.

(Spec. at 107 ll. 20-24.)

In the foregoing fashion and as described in “One Combined Medium” above, said transferred information of the second combining synch command causes microcomputer, 205, to combine the programming of Fig. 1A and of Fig. 1B and transmit said combined programming to monitor, 202M, where Fig. 1C is displayed.

(Spec. at 125 l. 31 through p. 126 l. 1.)

Fig. 3 (which is the combination of the apparatus of Figs. 1 and 2D (*See* Spec. at 86 l. 32 *et seq.*)) and Fig. 3A (the controller in the decoders 30 and 203 in Fig. 3, (*See* Spec. at 156 l. 18 *et seq.*)) depict the receiver station at which all five examples occur. Example #1 discloses in detail transfer of SPAM messages to addressed apparatus at the receiver station as well as the execution of controlled functions in response to the



messages. Example #2 discloses selective decryption of content of the SPAM message stream at decryptor 10 of signal processor 200. Example #3 discloses the creation of signal records at signal processor 200 based on monitoring information contained in the message stream that delivers the Fig. 1C image. Example #4 discloses functioning of the Fig. 3A controller 39 in decoder 203, including selective decryption at decryptor 39K and additional processing of the message stream content to create signal records. Example #5 discloses the functioning of signal processor 200 components (e.g., 6, 1, 2, 3, 30 and 40) to gather data on the availability of programming (see, for example, page 269 line 6).

Pages of the specification 271-278, state: “In examples #3, #4, and #5, the transmission of SPAM signal information causes signal processor, 200, to transfer signal record information by telephone to remote station computers,” (Spec. at 271 l. 33 *et seq.*) and teach this process in detail.

**(d) “Regulating the Reception and Use of Programming ... including Example #6” and “... Example #7” (pages 278-312) as well as “... More on Example #7 ... Combining ... Automatically to the Computer System ...” (pages 427-447)**

At pages 278-312 of the specification, Applicants teach methods of governing the reception and use of programming and relate to, for example, “digital ... television transmissions,” (See Spec. at 279 l. 14). Example #6 discloses a variant of the type of decryption techniques disclosed in examples #2 and #4 to regulate the use of control signal, in particular. Focusing on the receiver station of Fig. 4, (See Spec. at 286 l. 6 through p. 288 l. 20), example #7 discloses a multistage process of selectively decrypting digital components (video and audio) of a “television signal,” (See Spec. at 288 ll. 32-33). The multistage process includes selective transfer, e.g., by tuning or switching, (Spec. at 295 ll. 6-30). At pages 427-447, additional regulating concepts are taught which are variants to the disclosure of pages 287-312, and which rely on disclosures (e.g.,

intermediate transmitter station automation, (Spec. at 324-390)) which occur in the specification between pages 312 and 427.

Just like every one of examples #1-#5, examples #6 and #7 (Spec. at 287-312 and 427-447) are disclosed within the context of the “Wall Street Week” program. With respect to example #6, see, for example, page 281 lines 7-9. With respect to example #7, see, for example, page 289 lines 12-27 and page 429 lines 26-33. The examples also disclosed functionally and temporally with respect to earlier disclosures such as in “One Combined Medium” at pages 19-28 (*e.g.*, Spec. at 311 ll. 10-16 and p. 447 ll. 8-14).

**(e) “Monitoring Receiver Station Reception and Operation” (pages 312-324)**

At pages 312-324 of the specification, Applicants teach methods of monitoring the reception and operation of a receiver station using Fig. 5. Fig. 5 shows an extended system of monitoring decoder, controlled by signal processor 200, each monitoring an associated device and communicating monitor information to signal processor 200. This disclosure is also set within the context of the “Wall Street Week” program (*See* Spec. at 322 ll. 26-27), references Fig.1B (Spec. at 322 l. 35), and cites previously defined portions of example #3, which concern monitoring (*see* Spec. at 322 ll. 30-35, p. 174 ll. 21-23, and p. 190 ll. 14-16).

**(f) “Automating Intermediate Transmission Stations” (pages 324-390) including “Example #8” (pages 340-354)**

At pages 324-390 of the specification, Applicants teach automation of intermediate stations. The teachings relate to forms of programming that include, but are not limited to, television, radio, and data and that apply to all manner of broadcast and cablecast operations (*see* Spec. at 324 ll. 11-17, p. 339 l. 9 through p. 340 l. 10, and p. 389 l. 14 through p. 390 l. 11). Figs. 6A-B illustrate Applicants’ teachings in the setting of a cable television system. Generally speaking, apparatus of Figs. 6A-B are described

at page 324 line 18 through page 328 line 17 and page 337 lines 1-24, and the basic methods of operation of the station (e.g., operating according to a complete programming schedule) are disclosed at page 325 line 17 through page 326 line 18 and page 328 line 8 through page 331 line 16. Organizing units of prerecorded programming (e.g., to play according to schedule) is disclosed at page 331 line 17 through page 334 line 6. Playing according to schedule is disclosed at page 334 line 7 through page 336 line 35. Monitoring station operations is disclosed, *inter alia*, (e.g., to provide auditable proof-of-performance) at page 337 line 25 through page 339 line 8. In their teachings of organizing, playing and monitoring, Applicants introduce exemplary programming, including **program unit Q** which is a specific focus of later disclosures in Applicants' specification. Applicants teach the subject matter of pages 324-390 following pages 86-324 to make clear that the earlier teachings apply at intermediate transmission stations as well as end user stations, (e.g., Spec. at 339 l. 29 through p. 340 l. 10 and p. 389 l. 31 through p. 390 l. 11).

In example #8, Applicants teach a distribution station, such as a satellite uplink, which transmits control signals and units of programming, such as television spot commercials, to a plurality of automated intermediate transmission stations as taught at pages 324-340 (Spec. at 340 l. 13 through p. 345 l. 28). The intermediate transmission stations receive the control signals, (e.g., Spec. at 342 l. 18 through p. 343 l. 17 and p. 344 ll. 28-32), and the programming, and store and retransmit selected exemplary television spot commercials – **most focally program unit Q**, (e.g., Spec. at 343 ll. 5-17, p. 351 l. 27 through p. 352 l. 30, and p. 353 ll. 6-28), with each intermediate station operating independently and retransmitting its selected exemplary commercial(s) at different times and in different channels (Spec. at 343 l. 5 through p. 344 l. 22 and p. 345 l. 29 through p. 354 l. 3). The intermediate stations automatically retain and communicate proof-of-performance records to one or more remote auditing stations, (*see* Spec. at 341 ll. 11-15 and p. 352 l. 18 through p. 354 l. 3).

(g) **Examples #9 and #10 (pages 354-390 & 469-516):  
“Automating Intermediate ... Station Combined  
Medium Operations” (pages 354-374 of Example #9)  
and “Network Control of Intermediate Generating and  
Embedding” (pages 374-390 of Example #10)**

In examples #9 and #10, at pages 354-374 of the specification for example #9 and pages 374-390 for example #10, Applicants teach automation of an intermediate station in creation and transmission of combined medium programming (“of the same sort as ‘Wall Street Week’” at page 355 lines 1-2). At pages 469-516, Applicants teach the corresponding operations of a plurality of end user stations to which the intermediate station transmits the programming so created. Both examples focus on **Program unit Q** (see Spec. at 354 l. 35 through p. 355 l. 14, p. 374 l. 29 through p. 375 l. 12, p. 469 ll. 1-2, and p. 478 ll. 23-26). In each example, Applicants teach a sequence of messages and carefully **name each message in the sequence with a name that ties together the transmitter functions of pages 354-390 and the corresponding end user station functions of pages 469-516 unambiguously.** (Appendix D, a Glossary of Defined Terms, is included herewith identifying certain terms and defined by their use in the instant specification.) For example, the “program-instruction-set message (#9)” is defined at page 371 lines 17-19 and transmitted at page 372 lines 4-6; the “program-instruction-set message (#10)” is defined at page 385 lines 14-16 and transmitted at page 386 lines 12-14; the “program-instruction-set message (#10)” is received at the end user station(s) at page 484 lines 5-14; and at page 514 lines 8-13, 17 and 23-24 Applicants teach that the “program-instruction-set message (#9)” “[causes] the same functioning” at the end user station(s) as the “program-instruction-set message (#10)”. Some of the other messages in the sequence are named at page 372 lines 20-35, page 387 lines 19-31, page 490 lines 24-34, page 492 lines 1-11, page 495 lines 1-10, etc., and page 514 lines 8-31.

At pages 354-374 in example #9, Applicants teach local **origination**, (Spec. at 374 l. 6 and p. 368 ll. 3-4), of combined medium programming at an automated transmitter station (which is also an intermediate transmission station). **Program unit Q**,

which is delivered to and handled at the intermediate station according to the teachings of pages 324-354, (Spec. at 355 ll. 15-17), is disclosed as television-based combined medium programming, (Spec. at 354 l. 35 through p. 355 l. 14), that contains embedded signals, (e.g., Spec. at 356 l. 9 through p. 358 l. 21, p. 367 ll. 30-33, p. 369 ll. 4-6, and p. 372 ll. 22-35). As one example of the creation of programming, at pages 359 line 14 through page 365 line 21, Applicants teach automation of the intermediate station to create a set of instructions (called "PROGRAM.EXE" at page 365 line 8 and defined as the "program-instruction-set of Q" at page 365 lines 18-21) and to transmit the instructions, (Spec. at 371 l. 11 through p. 372 l. 6), in a "program-instruction-set message," (Spec. at 371 ll. 17-19 and p. 372 ll. 4-6).

At pages 374-390 in example #10, Applicants teach **network origination** (Spec. at 374 ll. 20-31) of combined medium programming and focus especially on the creation of programming *in the network* at automated intermediate stations as well as at an origination station. **Program unit Q** in example #10 is the same program unit Q as in example #10 (Spec. at 375 ll. 7-8). In example #10 Applicants disclose the same creation of programming as in example #9. For example, page 377 line 4 through page 382 line 14 corresponds to page 358 line 26 through page 366 line 18; "PROGRAM.EXE" appears at page 379 line 24, page 380 line 18, and page 382 line 3; definitions of the "program-instruction-set of Q.1" and "program-instruction-set of Q.2" occur at page 378 lines 23-28 and at page 380 lines 20-24 respectively; and generated instructions are transmitted at page 385 line 9 through page 386 line 14 in a "program-instruction-set message." But in contrast to example #9 which focuses on origination at just one transmitter station, in example #10 Applicants teach a plurality of automated intermediate station operating in parallel under control of a network origination station to generate and transmit control instructions messages (see Spec. at 59 ll. 29-33) to different end user stations. Furthermore, Applicants teach that the control instructions differ from each

other (e.g., the PROGRAM.EXE files in the messages (Spec. at 484 ll. 9-10 and 17-18) differ (Spec. at 379 ll. 5-31 and p. 380 ll. 7-20)).

The end user station functionalities of examples #9 and #10 are disclosed at pages 469-516. Applicants teach a series of combined medium outputs (e.g., Spec. at 491 ll. 10-16 and p. 506 ll. 17-21) in response to the transmitted control instructions or “messages” (Spec. at 484 ll. 5-18, p. 485 ll. 14-18, p. 490 l. 24 through p. 491 l. 16, and p. 505 l. 32 through p. 506 l. 21). Furthermore, the information outputted in the combined medium outputs differs from end user station end user station (Spec. at 491 ll. 10-29 and p. 506 ll. 17-31). Applicants also teach in examples #9 and #10 *other functionalities, such a viewer interactivity and interactivity with stations remote from the end user stations*, that are discussed more fully below.

**(h) Automating Ultimate Receiver Stations (pages 390-427)  
... Regulating Station Environment (pages 396-406) ...  
Coordinating a Stereo Simulcast (pages 406-419) ...  
Receiving Selected Programming (419-427)**

Focusing on Fig. 7, Applicants teach, at pages 390-396 of the specification, apparatus and functionalities of an end user station including computing, signal processing (e.g. Figs. 2-2D), switching, decrypting, etc., in addition to receivers, storage devices, and various speaker and display devices. On page 396 is additional disclosure associated with the preferred controller, 39, taught at pages 156-162. At pages 396-406, Applicants disclosure concepts associated with broadcast/cablecast control of end receiver station heating/cooling and mechanical systems as well as interactivity associated with, for example, utilities meter reading. At pages 406-419, Applicants teach coordinating separate systems under broadcast/cablecast control – in this case, controlling devices associated with television and radio to present a stereo simulcast – as well as monitoring the devices in order to provide records of the performance of the stereo simulcast and of other presentations at the end user station to a remote data collection

station. At pages 419-427, Applicants teach storing identifiers (e.g., of the stocks in a stock portfolio) and controlling the receiver station (e.g., tuning cable converter 222 at page 423 lines 11-13) to receive identified news at to process the news (e.g., Spec. at 425 ll. 30-34) according to pre-entered instructions of a user.

**(i) More Disclosure in the Context of “Wall Street Week”  
(pages 427-469)**

Having taught basic concepts of apparatus and automation of ultimate receiver stations, Applicants teach more advanced concepts within the context of “Wall Street Week” and its many attendant earlier teachings. Applicants’ objective, in so doing, is to **teach how the various teachings, attendant to “Wall Street Week”, relate to each other.**

**(j) More on Example #7 (pages 427-447)**

At pages 427-447 of the specification, Applicants elaborate on the earlier “Regulating Systems” (Spec. at 288 l. 22) teachings of example #7 (Spec at 288-312), which are summarized in section (d) above. Applicants teach the network described in “One Combined Medium” (Spec. at 20 l. 28 through p. 21 l. 4) as a **self structuring, parallel processing computing system.** This teaching follows Applicants teaching of “Automating Intermediate Transmission Stations” (Spec. at 324 l. 7 and pp. 324-390) in order to **elaborate on intermediate transmission station** (e.g., see references to Fig. 6 at page 429 line 29 and page 325 lines 15-16) **automation** within the context of example #7 (e.g., Spec. at 429 l. 26 through p. 435 l. 15) and the teachings attendant to “Wall Street Week” generally. Applicants teach the selective processing of incoming programming in accordance pre-stored “program-unit-of-interest information” (e.g., Spec. at 428 ll. 21-26) that enables different viewer stations to handle differently (e.g., store/display, automatically authorize purchase of) the “Wall Street Week” programming. Applicants teach storage of programming (Spec. at 445 ll. 27-32) that includes (e.g., Fig. 1C) the

locally provided information (*e.g.*, Fig. 1A) combined with the remotely supplied information (*e.g.*, Fig. 1B).

**(k) Controlling Combined Medium Operations (pages 447-457)**

At pages 447-457 of the specification, Applicants teach the functioning of “One Combined Medium” (Spec. at 19-28) within the context (*e.g.*, Spec. at 451 ll. 1-3) of functions that (i) precede (Spec. at 447 l. 26 through p. 451 l. 11) the beginning of the “One Combined Medium” programming (*i.e.*, “Wall Street Week”) and (ii) follow (Spec. at 451 l. 4 through p. 457 l. 10) the display of Fig. 1C. Applicants teach **providing and updating viewer data (*e.g.*, stock portfolio data) before the start of, for example, “Wall Street Week” and controlling viewer stations to generate and combine into the “One Combined Medium” programming a series of local images with each image combined within its specific time interval of relevance.** Applicants also teach **error correction techniques for controlling viewer station computers that function incorrectly or inefficiently.**

**(l) Transmitting Program Instructions Sets (pages 457-463)**

Having taught generation of more than one image, inefficiency, and error correction, Applicants teach methods, at pages 457-463, for timely provision of software for controlling the generating and combining of local images (*e.g.*, Fig. 1A) into the “One Combined Medium” programming. These include varying size of the bandwidth in which the software is located, as well as the location(s) and the timing pattern(s) in which the software is transmitted.

**(m) Audio Overlays and Other Overlays (pages 463-468)**

Focusing on Fig. 7D, Applicants teach a radio combined medium at pages 464-466 of the specification, including local selection at a radio receiver station of user specific audio and insertion of the selected audio into radio programming supplied from a



remote radio transmitter. Applicants teach a broadcast print combined medium at pages 466-468, including local selection at a broadcast print receiver station of user specific text and insertion of the selected text into broadcast print programming supplied from a remote transmitter. Focusing on Fig. 7E, Applicants teach at page 468 a television combined medium that includes customized audio as well as customized video.

**(n) Examples #9 and #10 Continued – Viewer/Listener  
Station Functionalities (pages 469-516)**

To teach the viewer/listener station processing of **program unit Q** in examples #9 and #10 (*see* section (g) above), Applicants focus on the “ultimate receiver station” (defined at page 40 line 35 through page 41 line 1) of Fig. 7 (*e.g.*, Spec. at 390 ll. 30-31 and p. 470 l. 9). Having taught the concepts summarized in section (m) above, Applicants can teach receiver stations interconnecting “apparatus ... in the fashion of Fig. 7E” (Spec. at 480 ll. 16-17). In this environment, Applicants teach local interactions (*e.g.*, by humans at page 471 lines 6-18 and page 508 line 19 through page 509 line, and by equipment at, for example, page 484 lines 7-18 and page 509 line 35 through page 511 line 22) result in interaction between local station and remote station equipment (*see* Spec. at 509 l. 35 through p. 510 l. 4). Drawing on virtually every previous teaching, Applicants disclose at pages 469-516 generation of a series of outputs (*e.g.*, Spec. at 485 ll. 14-18) that include video (*e.g.*, Spec. at 491 ll. 10-29), audio (Spec. at 491 l. 30 through p. 493 l. 22), and print (Spec. at 496 l. 3 through p. 499 l. 3). Applicants also disclose error correction, as summarized in the section above, at page 514 line 32 through page 516 line 13. Furthermore, Applicants disclose at page 514 lines 8-31 that the viewer/listener stations perform substantively identically in examples #9 and #10.

**(o) Preprogramming Receiver Station Operating Systems  
(pages 516-532) and The Preferred SPAM Header  
(pages 532-533)**

At pages 516-532 of the specification, Applicants teach one master control station (*e.g.*, Spec. at 518 ll. 17-26) transmitting operating system instructions to and programming transmitter and receiver station widely dispersed over a geographic area with the operating systems. Each station to be programmed selects those operating system instructions that apply to its particular type and version of reprogrammable device(s) (*e.g.*, Spec. at 522-524), routes the instructions to memory of the reprogrammable device(s), and commences operating under control of the operating system instructions. At pages 532-533, Applicants further focus on the desirability of flexibility for system expansion and teach that the preferred SPAM header is one byte in length.

**(p) The General Case ... Summary Example #11 (pages 533-557)**

While Applicants could summarize their disclosure by simply stating that each method and feature of their disclosed “unified system” (Spec. at 533 l. 24) could be combined with every other method and feature (on its face an apparent tautology), they choose, instead, to provide one final example which explicitly relies on the entirety of foregoing disclosure. In example #11, programming is distributed in a time cycling fashion (*e.g.*, Spec. at 536 l. 11 *et seq.* and p. 556 ll. 12-14) from a European master control station via satellite (Spec. at 536 ll. 4-6) to national intermediate transmission stations (Spec. at 534 ll. 26-31) which transmit to local intermediate transmission station (Spec. at 535 ll. 18-22) which, in turn, transmit to ultimate receiver stations (Spec. at 534 ll. 1-4) where programming is displayed (*e.g.*, Spec. at 552 ll. 20-30) and information is communicated responsively (*e.g.*, Spec. at 555 ll. 14-29) back to the European master control station and the national and local intermediate stations (Spec. at 555 l. 26 through p. 556 l. 9).

The European master control station controls the national intermediate stations (*e.g.*, Spec. at 541 l. 29 through p. 542 l. 2 and p. 543 ll. 20-29) to control the local intermediate stations (*e.g.*, Spec. at 544 l. 23 through p. 545 l. 11) to control the ultimate receiver stations (*e.g.*, Spec. at 547 ll. 19-26 and p. 548 ll. 1-6). User specific information is generated at each ultimate receiver station (*e.g.*, Spec. at 548 ll. 18-22 and p. 550 ll. 30-31), stored at each ultimate receiver station (*e.g.*, Spec. at 551 ll. 11-14), explained in combined medium output (Spec. at 552 ll. 17-30), and communicated to the European master control station and the national and local intermediate stations (Spec. at 555 l. 26 through p. 556 l. 9). At points in the disclosed example #11 cycle where functions are described in general, reference is made to earlier sections of the specification that teach the detail of how the function is performed. For example, at page 537 lines 6-17, the European master control station is explicitly disclosed as preprogramming the national and local intermediate stations and the ultimate receiver stations in the fashion summarized in the above section.

**(q) Conclusion**

As demonstrated above, within the specification, many embodiments of the claimed invention are disclosed. Each manifestation of an apparatus or method that includes the subject matter defined by the instant claims is a *single* embodiment of Applicants' invention. Such a single embodiment of Applicants' invention may have elements or steps that are described in detail in various separate sections of the instant specification. Every embodiment of the instant invention that is described by the specification as a whole is a *single* embodiment of the instant invention that provides support under the written description requirement.

It appears, however, that what the Examiner intends to request is that Applicants provide support for every limitation of an individual claim from within a single one of the detailed enumerated examples listed in the specification. In other words, the Examiner

requests that the support provided for all the limitations of an individual claim be contiguous or proximate within *only a portion* of the specification, rather than the specification as a whole. The written description requirement of 35 U.S.C. § 112 does not mandate such contiguous or proximate descriptions of each element or step of every individual claim.

“To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that the ‘inventor invented the claimed invention.’” *Regents of University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 43 U.S.P.Q.2d 1398, 1404 (Fed. Cir. 1997)(quoting *Lockwood v. American Airlines*, 107 F.3d 1565, 41 U.S.P.Q.2d 1398, 1405 (Fed. Cir. 1997)). Applicants submit that one of ordinary skill in the art would determine that the inventors possessed the claimed invention by recognizing that the embodiments indicated in Appendix A are described in the specification. Since, for the reasons discussed above, one of ordinary skill in the art would recognize that the specification is a single cohesive document containing many descriptions of methods and apparatus included in general integrated systems, there is no reason that the entire support for each individual claim must come from within a single detailed enumerated example described in the specification. However in order to advance the prosecution of the instant application, Applicants have selected embodiments for inclusion in Appendix A that include elements and steps described primarily in a single enumerated example of the specification.

**(r) The Subject Matter in the ‘81 Disclosure is Specifically Included In the Instant Specification**

Applicants recognize that they must convey that they were in possession of the invention as of the effective filing date of November 3, 1981. Applicants also recognize that the claim of priority under 35 U.S.C. § 120 requires that the previously filed application disclose the invention in the manner provided by the first paragraph of 35

U.S.C. § 112. Accordingly, throughout the prosecution of the pending claims, Applicants have provided support based on the application filed November 3, 1981. Applicants also submit herewith, in Appendix A, support for each claim limitation from the application filed November 3, 1981. Applicants respectfully submit that the detailed support provided in Appendix A demonstrates full compliance with the written description requirement of 35 U.S.C. § 112, first paragraph, and the related requirement of 35 U.S.C. § 120. Additionally, Applicants submit Appendix C herewith, to provide a correlation between the 1981 priority specification (as referenced the column and line numbers of Applicants' U.S. Pat. No. 4,694,490) and the instant specification, and Appendix D containing a Glossary of Defined Terms with respect to the instant specification.

In the Office Action at page 5, the Examiner seeks an explanation for how the '81 disclosure can be considered the specification support. The subject matter in the '81 disclosure is clearly included in the instant specification as demonstrated by Appendix C. Applicants respectfully assert that one skilled in the art, upon recognizing a description of the invention in the '81 disclosure, would readily recognize a description of the invention in the instant specification. The Examiner merely states at page 3 of the Office Action that the previously provided support does not cite the sentences, paragraphs, or passages of the instant specification. Applicants submit that the support provided in Appendix A demonstrates that the instant specification describes the subject matter that is originally disclosed in the '81 application and is presently claimed.

Applicants clarify that the instant specification does not included a verbatim duplication of the '81 disclosure. However, Applicants maintain that the subject matter in the '81 disclosure is specifically included in the instant specification. Neither 35 U.S.C. § 112 nor 35 U.S.C. § 120 requires that the parent application be incorporated into the pending application either by reference or by verbatim repetition. "In order to determine whether a prior application meets the 'written description' requirement with respect to later-filed claims, the prior application need not describe the claimed subject

matter in exactly the same terms as used in the claims; it must simply indicate to persons skilled in the art that as of the earlier date the applicant had invented the what is now claimed.” *Eiselstein v. Frank*, 52 F.3d 1035, 34 U.S.P.Q.2d 1467, 1470 (Fed. Cir. 1995)(citation omitted)(quoting *Vas-Cath v. Mahurkar*, 935 F.2d 1555, 1561, 19 U.S.P.Q.2d 1111, 1116 (Fed. Cir. 1991)). Applicants respectfully submit that the support cited in Appendix A demonstrates that the ‘81 disclosure indicates to persons skilled in the art that as of November 3, 1981, Applicants had invented what is now claimed.

**(3) 35 U.S.C. § 112 Includes No Requirement That Identical Embodiments of the Invention be Described in Both a Parent Application and a Subsequent Application Claiming Priority Therefrom**

As discussed above, there are many embodiments of the claimed invention disclosed in the specification in such full, clear, concise, and exact terms that one skilled in the art would clearly conclude that Applicants invented the claimed invention as of the effective filing date of the application. There is no conflict or discrepancy for Applicants to refer to one embodiment at one point during the prosecution of the instant application and to refer to another embodiment at a different point. Applicants may independently rely on various embodiments of the claimed invention to demonstrate support under the written description requirement. Likewise, there is no requirement in either 35 U.S.C. § 112 or 35 U.S.C. § 120 that identical embodiments of the invention be described in both a parent application and subsequent application claiming priority therefrom. As noted above, “the prior application need not describe the claimed subject matter in exactly the same terms as used in the claims; it must simply indicate to persons skilled in the art that as of the earlier date the applicant had invented the what is now claimed.” *Eiselstein v. Frank*, 52 F.3d 1035, 34 U.S.P.Q.2d 1467, 1470 (Fed. Cir. 1995)(citation omitted)(quoting *Vas-Cath v. Mahurkar*, 935 F.2d 1555, 1561, 19 U.S.P.Q.2d 1111, 1116 (Fed. Cir. 1991)). “[I]psis verbis disclosure is not necessary to satisfy the written

description requirement of section 112. Instead, the disclosure need only reasonably convey to persons skilled in the art that the inventor had possession of the subject matter in question.” *Fujikawa v. Wattonasin*, 39 U.S.P.Q.2d 1895, 1904 (Fed. Cir. 1996)(quoting *In re Edwards*, 568 F.2d 1349, 1351-52, 196 U.S.P.Q 465, 467 (C.C.P.A. 1978)). Applicants may rely on different embodiments at different times to show that the disclosure conveys to those skilled in the art that Applicants had possession of the claimed subject matter. Applicants respectfully submit that such use of multiple embodiments is permissible to demonstrate compliance with the written description requirement of 35 U.S.C. § 112. However, where clarity permits, Applicants have selected similar embodiments from both the ‘81 disclosure and the instant specification for inclusion in Appendix A to demonstrate compliance with the written description requirement.

#### **(4) Conclusion**

The Examiner has failed to establish a *prima facie* rejection under the written description requirement of 35 U.S.C. § 112, first paragraph, because no reasons are given as to why one skilled in the art would not consider the description sufficient. The Examiner also asserts that there is a lack of continuity between the disclosure in the application filed November 3, 1981 and the instant specification. Applicants maintain that, although the ‘81 disclosure is not included in identical words in the instant specification, the subject matter of the ‘81 disclosure is included in the instant specification. Furthermore to demonstrate support for the instant claims, submitted herewith, in Appendix A, are tables demonstrating support for each claim from both the ‘81 disclosure and the instant specification. In view of the above arguments and Appendices A, C & D, Applicants respectfully request that the rejection under the written description requirement of 35 U.S.C. § 112, first paragraph be withdrawn.

**b) The Specification Enables One Skilled in the Art to Make and Use the Invention**

The Examiner rejects claims 3-82 under the enablement requirement of 35 U.S.C. § 112, first paragraph. (Office Action at 5.) The Examiner concludes that the handling/transmission of “digital television signals” is not enabled by the specification. (Office Action at 75.) The Examiner also concludes that “data” could not be processed in the same manner as television and radio programming units. (Office Action at 86.) However, these conclusions are not directed specifically to the invention claimed by the presently pending claims.

The test for enablement is whether one reasonably skilled in the art could make or use the invention from the disclosure in the application coupled with information known in the art without undue experimentation. *United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 U.S.P.Q.2d 1217, 1223 (Fed. Cir. 1988). The invention is defined by the claims presented in the instant application. The Examiner concludes that the terms “digital” and “data” are not enabled. The Examiner fails to consider how these terms define Applicants’ invention in the instant claims. The Examiner has failed to include any analysis of whether any particular claim is supported by the disclosure. The PTO bears the initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by each claim is not adequately enabled by the description of the invention provided in the specification of the application. *In re Wright*, 999 F.2d 1557, 27 U.S.P.Q.2d 1510, 1513 (Fed. Cir. 1993) The Examiner has failed to consider the scope of protection provided by the claims in his analysis under the enablement requirement. Therefore, the Examiner has failed to establish a *prima facie* rejection under the enablement requirement of 35 U.S.C. § 112, first paragraph.

The Examiner suggests Applicants enumerate which claim trees are directed toward an ‘81 embodiment and which are directed toward an ‘87 embodiment. In Part a)(2)(r) above, Applicants have fully addressed this ground of rejection in the context of



the written description requirement. Applicants maintain that each pending claim defines an invention that has embodiments described in both the application originally filed November 3, 1981, and the instant specification. The Examiner has failed to determine that one reasonably skilled in the art could not make or use the invention by the conclusion that the claims “seem to mix and match ‘81 and ‘87 disclosed embodiments.” Therefore, the Examiner has failed to establish a proper rejection under the enablement requirement of 35 U.S.C. § 112, first paragraph.

**(1) “Digital” is Enabled by the Specification**

Claims 3-82 stand rejected under 35 U.S.C. § 112, first paragraph, because the Examiner alleges these claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. (Office Action at 76.) The Examiner asserts the specification fails to disclose the manner in which digital television signals are formatted and processed. The Examiner acknowledges that the transmission of digital television signals was known in the art. The rejection is based on the assertion that the transmission of digital television signals was not interchangeable with the transmission of analog television signals and the Examiner’s conclusion that Applicants’ disclosure assumes that they are interchangeable. This reasoning is an insufficient basis for the rejection of claims 3-82. Primarily, the Examiner’s discussion of the transmission and formatting of digital television signals is not directed to the scope of claims 3-82. In fact, there is no recitation to the term “digital” in the instant language.

For at least this reason, Applicants respectfully request the withdrawal of the rejection of the claims under the enablement requirement of 35 U.S.C. § 112, first paragraph.

**(2) “Data” is Enabled by the Specification**

Claims 3-82 and all claims depending therefrom stand rejected under 35 U.S.C. § 112, first paragraph, because the Examiner alleges these claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. (Office Action at 86.) The Examiner notes that the specification discloses that SPAM messages can be embedded within the “normal locations” of “other media” such as broadcast data or print. The Examiner also notes that the specification discloses that print or data information is transmitted within SPAM messages. Applicants acknowledge the disclosure from line 6 of page 85 through line 11 of page 86 of the instant specification, which describes that SPAM signals may accompany conventional print or data programming. It is unclear to what specific disclosure the Examiner refers by the specific citations recited on pages 86-87, and in the footnote on page 85 of the Office Action. The Examiner asserts that these disclosures are so contradictory that one of ordinary skill in the art would need to resort to undue experimentation to practice the invention. (Office Action at 85.) Applicants firmly assert that a thorough reading of the specification shows that the disclosure is in no way contradictory with respect to the term “data.”

Applicants disclose the use of SPAM signals to control and coordinate a wide variety of subscriber stations. (Spec. at 40.) The information of SPAM signals includes data, computer program instructions, and commands. (Spec. at 41 ll. 20-21.) One typical example of the composition of a SPAM signal is shown in Figure 2E. (Spec. at 44.) The specification clearly discloses that SPAM signals may included information segments. (Spec. at 44 l. 11.) Program instruction sets, intermediate generation sets, other computer information, and data may all be transmitted in information segments. (Spec. at 53 l. 34 through p. 54 l. 2.) Applicants disclose that SPAM signals can be embedded in many different locations in electronic transmissions. (Spec. at 85 ll. 6-7.) In broadcast and data

communications transmissions, SPAM signals can accompany conventional print or data programming in the conventional transmission stream. (Spec. at 85 ll. 20-23.) More precisely, the conventional print or data information may be transmitted in an information segment of a SPAM signal. (Spec. at 86 ll. 1-11.) Thus, SPAM signals can be included in broadcast print and data communication transmissions. Also, conventional data information can be transmitted in an information segment of a SPAM signal. There is no conflict in this disclosure. Any person skilled in the art would be enabled to use SPAM signals to control and coordinate a subscriber station through a broadcast data communication transmission by reading the instant specification. After thoroughly reading the specification any person skilled in the art would require no undue experimentation to practice Applicants' claimed invention.

The Examiner asserts that Applicants' disclosure did not describe a system or method which formatted, transmitted, received, processed, or displayed data program units under control of associated SPAM messages because data program units were actually transmitted with the SPAM messages. (Office Action at 84-85.) The Examiner extends this conclusion to hold that the disclosure fails to set forth the means or steps needed to make or use systems in which data is manipulated in the same manner as described for television and radio television program units. (Office Action at 86.) The Examiner's conclusion fails to follow from the stated facts. Data program units transmitted with SPAM signals can be manipulated under the control of the associated SPAM signal. The fact that data are disclosed as transmitted in the information segment of SPAM signals in no way conflicts with disclosed control of such transmissions through the use of the SPAM signals.

Furthermore, at most the Examiner's conclusion applies to data communication transmissions that are controlled through the use of SPAM signals accompanying data programming. However, the Examiner makes no attempt to construe the claims to determine how this rejection applies to the scope of each claim. Assuming *arguendo* that

the Examiner's reasoning is correct, every use of the term data does not violate the enablement requirement of 35 U.S.C. § 112. Applicants recognize that the pending claims set forth an invention that may be used with broadcast print or data communications transmissions. However, Applicants submit that the instant rejection does not directly apply to the following claim limitations:

Claim 3, "storing data," and "subscriber data,"

Claim 9, "subscriber data,"

Claim 10, "subscriber datum,"

Claim 11, "subscriber data,"

Claim 13, "process data,"

Claim 14, "identification data,"

Claim 18, "source of data and a supplier of data,"

Claim 32, "data that one of (a) designate at least one of a time of transmission and a channel of transmission of said at least one instruct signal; and specify one of a title of and a subject matter contained in one of said mass medium programming and said data associated with said at least one instruct signal;...",

Claim 37, "source of data and a supplier of data,"

Claim 41, "source of data and a supplier of data,"

Claim 47, "storing data," "data transmission from a remote data source," "data of interest," and "selected data,"

Claim 52, "data transmission,"

Claim 54, "specific data,"

Claim 55, "more data for subsequent processing or presentation,"

Claim 56, "identification data designating said downloadable code,"

Claim 59, "processed and stored data,"

Claim 60, "a source or supplier of data,"

Claim 61, "processed and stored data,"

Claim 63, “data which operates ... to identify at least one of said mass medium programming,”

Claim 64, “first data,” “data designating at least one of said subscriber response and a product or service,” and “second data,”

Claim 65, “first data,”

Claim 67, “first data,”

Claim 69, “one or more data for subsequent processing or presentation,”

Claim 74, “one or more data that designate a time or a channel of transmission of said instruct signal,” “one or more data that specify the title of or some subject matter contained in a unit of mass medium programming,” and “data associated with said instruct signal,”

Claim 77, “first data,” “second data,”

Claim 79, “first data,” “source or supplier of data,”

Claim 81, “subscriber datum,” and

Claim 82, “subscriber datum.”

For at least the above reasons, Applicants submit that the subject matter defined by the above listed claims is described in the specification in such a way to enable any person skilled the art to make or use Applicants’ invention. Accordingly, Applicants respectfully request that the rejection of these claims be withdrawn.

**c) The Best Mode of Practicing the Claimed Invention  
Contemplated by Applicants is Disclosed in the Specification**

Claims 3-82 stand rejected under 35 U.S.C. § 112, first paragraph, because it is asserted that the best mode contemplated by the inventor has not been disclosed. (Office Action at 86.) The first paragraph of 35 U.S.C. § 112 provides that the specification “shall set forth the best mode contemplated by the inventor of carrying out his invention.” A two step inquiry is used to determine if the best mode requirement is met. *Chemcast Corp. v. Arco Industries Corp.*, 913 F.2d 923, 16 U.S.P.Q.2d 1033,1036 (Fed. Cir. 1990)

First, the Examiner must determine whether, at the time Applicants filed their patent application, they knew of a mode of practicing the claimed invention that they considered to be better than any other. *Id.* Second, the Examiner must determine whether the disclosure is adequate to enable one skilled in the art to practice the best mode, if one was known to Applicants. *Id.* This inquiry is designed to preclude applicants from concealing preferred embodiments of their inventions which they have conceived. *Id.* The Examiner has failed to apply this test in rejecting the pending claims under the best mode requirement. The Examiner has failed to present evidence that Applicants concealed any embodiment of their invention which they considered to be better than the embodiments disclosed in the instant specification. Therefore, Applicants respectfully request the withdrawal of the rejection of claims 3-82 under the best mode requirement of 35 U.S.C. § 112, first paragraph.

The Examiner compares the present case to *In re Ruschig*, 379 F.2d 990, 154 U.S.P.Q. 118 (C.C.P.A. 1967). The misapplication of *Ruschig* by the Examiner cannot substitute for the two step inquiry to be applied under a proper best mode analysis. The reasoning applied in *Ruschig* is inapplicable to the best mode rejection made by the Examiner in the instant case. First, the issue in *Ruschig* was whether a claim was supported by the disclosure of the appellants' application. *Id.* 154 U.S.P.Q. at 119. The analysis in *Ruschig* by the United States Court of Customs and Patent Appeals does not address the best mode requirement. Second, the *Ruschig* analysis is inapplicable to the facts in the instant case. In *Ruschig*, a claimed specific species of a genus of chemical compounds was not named or identified by formula in the specification. *Id.* 154 U.S.P.Q. at 121. The issue was whether the disclosure of the genus along with teachings of a number of other species would lead one skilled in the art to the claimed species. The Court held that the disclosure in *Ruschig* failed to include guides directing the selections required to arrive at the claimed compound rather than any of the many other compounds that could also be made within the genus. *Id.* 154 U.S.P.Q. at 123. The Court employed

the analogy of travel through a forest. The Court found that the appellants were pointing to trees, but that there were no blaze marks to single out the trees that led to the unnamed compound. *Id.* 154 U.S.P.Q. at 122. The facts in *Ruschig* are in direct contrast to the present case. In *Ruschig* the claim limitation was *not* named or identified in the specification. In the instant case the Examiner acknowledges that Applicants' disclosure addresses the variety of claim limitations included in the claims. (Office Action at 88.) As the claim limitations are addressed by the instant specification, no blaze marks are required to lead a skilled artisan through a forest of possibilities to find them.

The Examiner asserts that he cannot recognize the pending claimed processes within the "woods." (Office Action at 89.) In response, Applicants have provided detailed support for each claim limitation. Applicants find it disingenuous for the Examiner to now assert that somehow Applicants have erred by describing numerous specific claim limitation details (*i.e.* pointing to the trees that make up the Examiner's woods.)

The Examiner asserts that there is a scattering of teachings across the multiple applications in the chain of continuity of the ancestor applications relied upon by the claim of priority in the instant application. (Office Action at 89.) The Examiner concludes that this scattering constitutes either (1) concealment of the best mode, or (2) a failure to meet the written description requirement. For the reasons set forth above in Part a), Applicants have fully complied with the written description requirement. Also as explained above in Part a), there is no scattering of teachings across applications. The instant application is a proper continuation application of Application No. 096,096, filed September 11, 1987, which in turn is a proper continuation-in-part of Application No. 317,510, filed November 3, 1981. The instant disclosure is substantially identical to the disclosure of Application No. 096,096 (the '87 disclosure.) The instant disclosure includes substantially all the subject matter in the disclosure of Application No. 317,510 (the '81 disclosure) and adds considerable details and improvements to the methods and

apparatus disclosed therein. There is no scattering of teachings across these disclosures as asserted by the Examiner.

The Examiner confusingly questions whether Applicants disclosed their best mode in relation to the terms “data,” “pending claim processes as a whole,” and “digital.” In accordance with M.P.E.P. § 2165.03, the Examiner should assume that the best mode is disclosed unless there is evidence to the contrary. The Examiner points to no evidence indicating Applicants contemplated a best mode of carrying out the claimed invention that they have failed to disclose. That the Examiner questions whether the best mode is disclosed with respect to the “pending claim processes as a whole” is not evidence that Applicants concealed the best mode. With respect to the terms “data” and “digital,” the Examiner has utterly failed to apply the first step of the proper best mode analysis. The Examiner has failed to determine that Applicants knew that one mode was better than another. Therefore, the Examiner has failed to establish a proper best mode rejection. Applicants note that this best mode rejection appears to be a repetition of the enablement rejection, which asserts that no embodiment of Applicants invention claimed using the terms “data” or “digital” is adequately disclosed. The enablement rejection is fully addressed in Part b) above.

The Examiner has failed to apply the proper analysis in rejecting claims 3-82 under the best mode requirement of 35 U.S.C. § 112. The Examiner has failed to determine whether Applicants knew that one mode was better than another at the time the application was filed. Thus, the Examiner cannot determine whether the disclosure is adequate to enable one of ordinary skill in the art to practice the best mode. As the Examiner has failed to establish a proper rejection under the best mode requirement, Applicants respectfully request that these rejections under 35 U.S.C. § 112, first paragraph, be withdrawn.



**2. The Claims Comply With 35 U.S.C. § 112, second paragraph**

Claims 3-82 stand rejected under 35 U.S.C. § 112, second paragraph. (Office Action at 5 & 91.) The second paragraph of 35 U.S.C. § 112 mandates that the specification conclude with claims that meet two requirements. First, the claims must set forth the subject matter that Applicants regard as their invention. Second, the claims must be definite. The legal standard for definiteness is whether a claim reasonably appries those of skill in the art of its scope. *In re Warmerdam*, 33 F.3d 1354, 31 U.S.P.Q.2d 1754, 1759 (Fed. Cir. 1994). When rejecting any claim, the Examiner is required to state the reason for such rejection. 35 U.S.C. § 132. Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection. *Chester v. Miller*, 906 F.2d 1574, 1578, 15 U.S.P.Q.2d 1333, 1337 (Fed. Cir. 1990). Applicants submit that the Office Action fails to demonstrate that any claim is directed to subject matter that Applicants do not regard as their invention. The Office Action also fails to demonstrate that any claim fails to reasonably apprise those of skill in the art of its scope. Applicants, therefore, respectfully request the withdrawal of these rejections under 35 U.S.C. § 112, second paragraph.

Claims 3-82 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. This rejection is directed to the terms “programming” and “programming.” No further reasons are given to support this rejection. The Examiner utterly fails to indicate why any claim fails to reasonably apprise those of skill in the art of its scope. This rejection is so uninformative that it prevents Applicants from recognizing and seeking to counter the grounds for rejection and is therefore invalid under 35 U.S.C. § 132. Accordingly, Applicants respectfully request that this rejection be withdrawn. The claim language “programming” and is address below in Part b).

**a) The Claims Define That Which Applicants Regard as Their  
Invention**

Claims 3-82 stand rejected under 35 U.S.C. § 112, second paragraph, because the Examiner asserts that the claims fail to set forth the subject matter which Applicants regard as their invention. (Office Action at 91.) The Examiner requests “to remove all claim terms from pending claims when [their] conceptual meanings are not identical.” This logic is incorrect for the reasons given in Part 1.a)(2)(r) above, in which Applicants maintain that the subject matter in the ‘81 disclosure is specifically included in the instant specification.

Furthermore, the Examiner has merely pointed to evidence that Applicants believe that the claims are supported by the ‘81 disclosure. The conclusion that the claims fail to set forth subject matter which Applicants regard as their invention simply does not follow from the fact that Applicants believe that the claims are supported by the ‘81 disclosure. Applicants believe that the claims define an invention that is fully disclosed in both the ‘81 disclosure and the instant specification. The Examiner has failed to point to any evidence indicating that Applicants regard the invention to be something other than what is defined by the claims. As Applicants have consistently regarded the subject matter defined by the instant claims to be their invention, Applicants respectfully request the withdrawal of this rejection of claims 3-82 under 35 U.S.C. § 112, second paragraph.

**b) There is no discrepancy in the use of the term  
“Programming”**

In considering claims, the Examiner suggests that the Applicants’ use of the term “programming” in the pending claims is “repugnant to the normal/usual use of said terminology.” (Office Action at 96.) The Examiner further suggests that, in the ‘81 disclosure (in the Parent Application No. 317,510 filed November 3, 1981), the Applicants defined the term “programming” as “everything transmitted over television or radio intended for communication of entertainment or to instruct or inform.” The

Examiner relies on the definition of programming set forth in the abstract of the disclosure. "The purpose of the Abstract is to enable the Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure. The abstract shall not be used for interpreting the scope of the claims." 37 C.F.R. § 1.72(b). By properly making reference to the whole specification, the Examiner will get a more complete understanding of Applicants' meaning of the term "programming".

"It is the object of this invention to unlock this potential [for a significant increase in the scope and scale of multi-media and multi-channel presentations] by the development of means and methods which permit progra[m]ming to communicate with equipment that is external to television and radio receivers, particularly computers and computer peripherals such as printers." "It is the further purpose of this invention to provide means and methods to process and monitor such transmissions and presentations at individual receiver sites and to control, in certain ways, the use of transmitted progra[m]ming and the operation of certain associated equipment. Such receiver sites may be stations or systems that intend to retransmit the progra[m]ming, or they may be end users of the progra[m]ming. The present invention contemplates that certain data may be encrypted and that certain data collected from such processing and monitoring will automatically be transfer[r]ed to a remote geographic location or locations." U.S. Patent No. 4,694,490, col. 1, ll. 22-24, 36-53.

Applicants contend that the definition of "programming", to include television and radio entertainment information, computer programming and data to control execution of a processor, in the present application is clearly supported by the definition of the term "programming" in the '81 disclosure.

Applicants assert that their use of the term "programming" in the present application is both consistent with normal/usual usage and with the parent application. *Webster's Seventh New Collegiate Dictionary* (1977) gives separate definitions for the

noun and verb forms of “programming”. The noun form of “programming” is defined with a series of gerunds:

**“programming or programing ... n : the planning, scheduling, or performing of a program.”**

And the noun form of “program”, which includes the word “programming” in its definition, is:

**“program or programme ... n ... 1 ... : a public notice 2 a : a brief usu. printed outline of the order to be followed, of the feature or features to be presented, and the persons participating (as in a public exercise, performance, or entertainment) b : the performance of a program; esp : a performance broadcast on radio or television 3 : a plan or system under which action may be taken toward a goal 4 : CURRICULUM 5 : PROSPECTUS, SYLLABUS 6 a : a plan for the programming of a mechanism (as a computer) b : a sequence of coded instructions that can be inserted into a mechanism (as a computer) or that is part of an organism 7 : matter for programmed instruction”**

The verb form of “programming” is defined with the verb form of “program” and is:

**“program also programme vt -grammed or -gramed; -gramming or -graming 1 a : to arrange or furnish a program of or for : BILL b : to enter in a program 2 : to work out a sequence of operations to be performed by (a mechanism) : provide with a program 3 : to insert a program for (a particular action) into or as if into a mechanism”**

Applicants assert that these definitions are entirely consistent with Applicants’ present and parent application. For example, the ‘81 disclosure describes a well known television program, “Wall Street Week”, at U.S. Patent No. 4,694,490 (hereinafter ‘490) col. 19 l. 5 through col. 20 l. 7. At ‘490 col. 19 l. 48-53 and col. 19 l. 63 through col. 20 l. 7, Applicants disclose a sequence of operations performed by a mechanism (a computer) which includes a first output (‘490 col. 19 l. 65 through col. 20 l. 2) and a second output (‘490 col. 20 l. 6). This sequence of operations is performed in response to “several instruction signals” (‘490 col. 19 l. 46) followed by “an instruction signal” (‘490 col. 19 l. 60). (That Applicants’ “signals” are coded is disclosed at ‘490 col. 11 lines 12-

14 where a code reader passes the signals to a computer.) Applicants assert that these disclosed instruction signals ('490 col. 19 l. 48-53 and 60-67) clearly meet the dictionary definition of a program--"a sequence of coded instructions that can be inserted into a mechanism (as a computer)"--and are, in fact, what is now, and was in 1981, widely known among those of considerably less than ordinary skill in the art as "a computer program" and as "computer programming".

Applicants also assert that the first output ('490 col. 19 l. 65 through col. 20 l. 2) and a second output ('490 col. 20 l. 6), *by themselves*, also meet the dictionary definition of a program--"the performance of a program". Furthermore, Applicants contend that they constitute both computer programming *and television programming*. Being generated and outputted by a computer qualifies them as computer programming. Being displayed as an integral part of a television program--"Wall Street Week" ('490 col. 19 l. 45, 54-60, and col. 19 l. 67 through col. 20 l. 2)--qualifies them as television programming.

Finally, Applicants assert that this disclosure is in no way inconsistent with the meaning given to "programing" in the Abstract of Applicants' parent disclosure--"everything transmitted over television or radio intended for communication of entertainment or to instruct or inform." Applicants clearly disclose that the signals are "instruction signals embedded in the 'Wall Street Week' programing transmission" ('490 col. 19 l. 43-44) and that "These signals instruct" ('490 col. 19 l. 48) and "This signal instructs" ('490 col. 19 l. 64-65).

For the reasons set forth above, Applicants assert that the term "programming" as used throughout the instant application to include what are commonly known as television, radio and computer programming is clearly and unambiguously supported by the specification as filed and withdrawal of the corresponding rejection is respectfully requested.

**G. Response to Rejections under 35 U.S.C. § 102**

**1. Rejection under 102 (b) over Applicants' U.S. Pat. Nos. '490 & '725**

Claims 3-82 stand rejected under 35 U.S.C. § 102(b). The Examiner asserts that claims are clearly anticipated by Applicants' own U.S. Patent Nos. 4,694,490 and 4,704,725. (Office Action at 94.) The instant application claims the benefit under 35 U.S.C. § 120 of the filing date of both the previous applications that matured into the patents relied upon by the Examiner. Accordingly, neither of the patents relied upon by the Examiner is available as a reference under 35 U.S.C. § 102(b). The Examiner asserts that the instant specification fails to adequately support the instant claims. This assertion is incorrect and irrelevant to Applicants' claim of priority under 35 U.S.C. § 120.

Under 35 U.S.C. § 120, an application obtains the benefit of the filing date of a previously filed patent application if (a) the invention is disclosed in the manner provided by the first paragraph of section 112 in the previously filed application, (b) the application is filed by inventors named in the previously filed application, (c) the application is filed before the patenting or abandonment of or termination of proceedings on an application similarly entitled to the benefit of the filing date of the first application, and (d) the application contains a specific reference to the earlier filed application. The instant application meets each of these requirements with respect to Applicants' previous Application No. 317,510 filed November 3, 1981. The Examiner acknowledges that Application No. 317,510, discloses the subject matter of the instant claims. The same inventors as filed the instant application filed application No. 317,510. The instant application was filed before the termination of proceedings of Application No. 113,329, filed August 30, 1993, (currently pending) which is similarly entitled to the benefit of the filing date of Application No. 317,510. The instant application contains a specific reference to the entire chain of Applicants' applications extending back to Application No. 317,510. As the instant application meets all the requirements of 35 U.S.C. § 120,

the instant application is entitled the benefit of the effective filing date of November 3, 1981. Accordingly, neither U.S. Patent No. 4,694,490 nor No. 4,704,725 are available as prior art under 35 U.S.C. § 102(b) as neither was patented or published more than one year prior to November 3, 1981.

Furthermore, the Examiner asserts, “this rejection, under 35 U.S.C. § 102(b), is caused by Applicants choice to cite passages that did not exist in the original ‘87 C.I.P. disclosure.” Applicants respectfully assert that the showing that the instant claims are supported by the ‘81 disclosure cannot form the basis for this rejection under 35 U.S.C. § 102(b). To the contrary, the showing establishes that the instant claims are entitled to an effective filing date of November 3, 1981. Additionally, Applicants assert that the instant claims are fully supported by the instant specification as discussed above in Part F.1.a) above.

For at least the above reasons, Applicants respectfully submit that U.S. Patents Nos. 4,694,490 and 4,704,725 are not available as prior art with respect to the presently pending claims. Applicants, therefore, request the withdrawal of the rejection of claims 3-82 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patents 4,694,490 and 4,704,725.

## **H. Response to Rejections under 35 U.S.C. § 103**

### **1. *Prima Facie* Case of Obviousness**

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference to combine the teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references combined) must teach or suggest all the claim recitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not based

on Applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). M.P.E.P. 706.02(j).

**2. Rejection under 103 (a, b & e) over Applicants WO 89/02682.**

Claims 3-82 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' WO 89/02682.

The Examiner asserts that all the instant claims are unpatentable over WO 89/02682 to the extent that applicants can satisfy the support enablement requirement of Section 112, first paragraph, but not the support requirement. WO 89/02682 is the international publication number of the Applicants' own international application published March 23, 1989. The specification of this international application substantially corresponds to the specification of the instant application and the specification of the parent application filed September 11, 1987. Claims 2 to 303 are entitled to the effective filing date of November 3, 1981. However, assuming *arguendo* that the claim of priority to the 1981 application is flawed, then the claims are entitled to an effective filing date of September 11, 1987. In either case, this international application published March 23, 1989, is unavailable as prior art. Accordingly, Applicants request the withdrawal of this rejection of claims 3-82 under 35 U.S.C. § 103(a).

**3. Rejection over Greenberg, U.S. Pat. No. 4,547,804 in view of Galumbeck et al., U.S. Pat. No. 4,725,886.**

Claims 3-82, that are directed to processes of controlling cable head end processes and monitoring of those processes and combined medium presentation, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Greenberg, U.S. Pat. No. 4,547,804 in view of Galumbeck et al., U.S. Pat. No. 4,725,886.



The Office Action states that “considering pending claims of the group 3-82, that cover, *inter alia*, processes of controlling cable head end processes and monitoring of those processes and combined medium presentation are suggested by [Greenberg].”

First, Applicants traverse this rejection on the grounds that Greenberg is an unavailable reference in that it was filed on March 21, 1983, subsequent to Applicants’ priority date of November 3, 1981. Additionally, Galumbeck et al. is an unavailable reference in that it was filed on April 21, 1983, again subsequent to Applicants’ priority date of November 3, 1981.

Secondly, the Office Action fails to analyze any of Applicants’ claim language in the rejection but rather chooses to summarize the specific contents of the instant 80 claims (numbers 3-82) with the statement, “processes of controlling cable head end processes and monitoring of those processes and combined medium presentation.” The Examiner has failed to identify which, if any, claims actually fall into the group that stands rejected. Under 37 C.F.R. § 1.104(c), “If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected.” This rule requires that the Examiner at a minimum identify the claims subject to each ground of rejection.

The Examiner has failed to identify which, if any, claims actually fall into the group that stands rejected. When rejecting any claim, the Examiner is required to state the reason for such rejection. 35 U.S.C. § 132. Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection. *Chester v. Miller*, 906 F.2d 1574, 1578, 15 U.S.P.Q.2d 1333, 1337 (Fed. Cir. 1990). Under 37 C.F.R. § 1.104(c), “If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected. . . . The pertinence of each reference, if not apparent, must be clearly explained and *each rejected claim specified*.” (emphasis added) Section 707.07(i) of the M.P.E.P. sets forth, “In every letter, each pending claim should be

mentioned by number, and its treatment or status given.” Accordingly, to state a valid rejection the Examiner must, at a minimum, specify by number the claims subject to each ground of rejection. The failure of the Examiner to identify by number the claims that may stand rejected results in a statement that is so uninformative that it prevents Applicants from recognizing and seeking to counter the grounds for rejection. As the purported rejection fails to identify the claims rejected by number, the purported rejection fails to comply with the requirements of 35 U.S.C. § 132, 37 C.F.R. § 1.104(c) and M.P.E.P § 707.07(i).

The Examiner has failed to provide information on which a *prima facie* case of obviousness could be based under 35 U.S.C. § 103(a).

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

*Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459, 467 (1966).

The Examiner has utterly failed to conduct the second inquiry set forth in *Graham v. Deere*. The Office Action includes no inquiry into the differences between the prior art and the claims at issue. “Ascertaining the differences between the prior art and the claims at issue requires interpreting the claim language.” M.P.E.P. § 2141.02. The Examiner makes no attempt to interpret the claim language. The Examiner makes no attempt to determine whether *the pending claims* are obvious in view of the cited prior art. Rather, the Examiner merely asserts what he feels the applied references teach. The Office Action includes no showing that applied references teach all of the limitations of any of the pending claims. Thus, the Office Action provides insufficient information on which to base a *prima facie* case of obviousness.

Applicants respectfully submit that, notwithstanding the accuracy of the Examiner’s characterization of the applied references or applicability of any of these

references against the pending claims, for the above reasons the Office Action fails to state a *prima facie* case of obviousness. Therefore, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be withdrawn.

**4. Rejection over over Jeffers et al., U.S. Pat. No. 4,739,510.**

Claims 3-82, that are directed to, *inter alia*, processes of controlling broadcast subscriber stations, including decrypting, processing, storing, generation and monitoring to those processes and combined medium presentation, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jeffers et al., U.S. Pat. No. 4,739,510.

The Office Action states that “considering pending claims of the group 3-82, that cover, *inter alia*, processes of controlling broadcast subscriber stations, including decrypting, processing, storing, generation and monitoring to those processes and combined medium presentation they cover what [Jeffers et al.] suggests...broadcast programming including, *inter alia*, audio and control signals that are digitized and inserted into the horizontal blanking interval of distributed television programming.”

First, Applicants traverse this rejection on the grounds that Jeffers et al. is an unavailable reference in that it was filed on April 2, 1987, subsequent to Applicants’ priority date of November 3, 1981. Therefore, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be withdrawn.

Secondly, the Office Action fails to analyze any of Applicants’ claim language in the rejection but rather chooses to summarize the specific contents of the instant 80 claims (numbers 3-82) with the statement, “processes of controlling broadcast subscriber stations, including decrypting, processing, storing, generation and monitoring to those processes and combined medium presentation ...broadcast programming including, *inter alia*, audio and control signals that are digitized and inserted into the horizontal blanking interval of distributed television programming.” The Examiner has failed to identify which, if any, claims actually fall into the group that stands rejected. Under 37 C.F.R. §

1.104(c), "If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected." This rule requires that the Examiner at a minimum identify the claims subject to each ground of rejection.

The Examiner has failed to identify which, if any, claims actually fall into the group that stands rejected. When rejecting any claim, the Examiner is required to state the reason for such rejection. 35 U.S.C. § 132. Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection. *Chester v. Miller*, 906 F.2d 1574, 1578, 15 U.S.P.Q.2d 1333, 1337 (Fed. Cir. 1990). Under 37 C.F.R. § 1.104(c), "If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected. . . . The pertinence of each reference, if not apparent, must be clearly explained and *each rejected claim specified*." (emphasis added) Section 707.07(i) of the M.P.E.P. sets forth, "In every letter, each pending claim should be mentioned by number, and its treatment or status given." Accordingly, to state a valid rejection the Examiner must, at a minimum, specify by number the claims subject to each ground of rejection. The failure of the Examiner to identify by number the claims that may stand rejected results in a statement that is so uninformative that it prevents Applicants from recognizing and seeking to counter the grounds for rejection. As the purported rejection fails to identify the claims rejected by number, the purported rejection fails to comply with the requirements of 35 U.S.C. § 132, 37 C.F.R. § 1.104(c) and M.P.E.P § 707.07(i).

The Examiner has failed to provide information on which a *prima facie* case of obviousness could be based under 35 U.S.C. § 103(a).

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

*Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459, 467 (1966).

The Examiner has utterly failed to conduct the second inquiry set forth in *Graham v. Deere*. The Office Action includes no inquiry into the differences between the prior art and the claims at issue. "Ascertaining the differences between the prior art and the claims at issue requires interpreting the claim language." M.P.E.P. § 2141.02. The Examiner makes no attempt to interpret the claim language. The Examiner makes no attempt to determine whether *the pending claims* are obvious in view of the cited prior art. Rather, the Examiner merely asserts what he feels the applied references teach. The Office Action includes no showing that applied references teach all of the limitations of any of the pending claims. Thus, the Office Action provides insufficient information on which to base a *prima facie* case of obviousness.

Applicants respectfully submit that, notwithstanding the accuracy of the Examiner's characterization of the applied references or applicability of any of these references against the pending claims, for the above reasons the Office Action fails to state a *prima facie* case of obviousness. Therefore, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be withdrawn.

**5. Rejection over Hazelwood et al., U.S. Pat. No. 4,025,851 in view of the publication "System and Apparatus for Automatic Monitoring Control of Broadcast Circuits" by Yaname et al. and Hetrich, Australian Patent No. 74,619.**

Claims 3-82, that are directed to, *inter alia*, processes of controlling cable head end processes and monitoring of those processes and combined medium presentation are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hazelwood et al., U.S. Pat. No. 4,025,851 in view of the publication "System and Apparatus for Automatic Monitoring Control of Broadcast Circuits" by Yaname et al. and Hetrich, Australian Patent No. 74,619.

**a) Characterization of References**

**(1) Hazelwood et al.**

Hazelwood et al. states,

In accordance with a preferred embodiment of the invention, each network originated program is coded with a data signal from which each program may be identified. This coded data signal may take the form of a code identifying the program itself, or the code may identify the source of the program and the time that the program originated to permit the program to be identified from the station logs. The encoding is done by placing binary data on line 20 or any other unused line in the vertical interval. The coded signal is applied to the network where it is received by the network affiliated stations for immediate or delayed broadcast.

A plurality of monitoring sites are disposed about the network coverage area to monitor the programs broadcast by the network affiliates. The monitoring may be done remotely by means of a monitor receiver that receives the programs broadcast by the network affiliates and recovers the data encoded on line 20. Alternatively, the monitoring unit may be installed on the premises of the network affiliate to monitor the program material applied to the transmitter. In the latter case, there is no need to transmit the data encoded on line 20, and the data may be stripped off by the monitoring unit before the signal is applied to the transmitter.

In either case, the data recovered from line 20 is stored at the remote location in a change format, that is, a format wherein the data is stored once, and new data is stored only when there is a change in the data. In addition, data indicative of the time interval between changes in data is stored. The time information permits delayed broadcasts to be identified since the real-time data will not correspond to the network time data in a delayed broadcast.

Each remote unit is periodically interrogated (usually once per day) via telephone line by a centrally located computer that controls a mini-computer located in each of the remotely located monitor units. Upon interrogation, the mini-computer causes the stored data to be transmitted in blocks to the central computer together with error checking data to permit the central computer to request the remotely located mini-computer to retransmit the data in the event that an error is found. In addition, each remotely located mini-computer may be reprogrammed by the central computer in the event that a modification of the data handling is desired. This is accomplished by providing each remotely located mini-computer with a hard-wired read-only memory (ROM) that initiates the data processing and transmission and a random-access memory (RAM) which may be reprogrammed by the central computer upon completion of the read-only memory routine. (Column 2, lines 8-59.)

In response to the Office Action's characterization of Hazelwood et al., on page 103, the Office Action states that "the embedded codes ... identify the programming being broadcast by *title*,..." (emphasis added). Hazelwood et al. fails to teach identification by "title," but rather, "identified by the source identification code ... and the time of origin ... serving to identify the program. Alternatively, a unique program identifying code can be generated for identifying each program, and used instead of or in addition to the time and source identification code;..." (column 5 lines 61-66).

The Office Action on page 103 characterizes Hazelwood et al. as teaching "the embedded monitoring *instruction* codes..." and, "means for performing communication *programming* to a storage device," (emphasis added). Hazelwood et al. fails to teach "instruction codes," and "performing communication *programming* to a storage device," but rather "a data signal from which each program may be identified," (column 2 line 11), is "transmitted in blocks to a central computer..." (column 2 lines 46-47).

Additionally, the Office Action on page 104 states, "At the encoder 12 of Fig. 1, has to have (sic) been controlled so as to communicate the monitoring codes to the summing circuit 14 at "selected" times in view that the monitoring codes were carried through the line at the selected time in which they were provided to summing circuit 14." Applicants' best understanding of the Office Action's characterization may apply to Applicants' following claim language:

Claim 18, "a time of transmission,"

Claim 19, "a specific time,"

Claim 21, "specific time,"

Claim 22, "a specific time,"

Claim 32, "a time of transmission,"

Claim 37, "a time of transmission,"

Claim 41, "a time of transmission,"

Claim 60 "a time of transmission,"

Claim 61, “a specific time,”

Claim 64, “a specific time,”

Claim 74, “a time or a channel of transmission,” and

Claim 79, “a time of transmission.”

However, Hazelwood et al. mere teaches that “the video information from the camera 10 is combined with the coding information from the encoder 12 at a mixing point 14 before the signal applied to a network feed line 16 which feeds all of the local network affiliates such as the network outlet 18 shown in Fig. 1,” (column 3 lines 23-28). There is no teaching in Hazelwood et al. of “selected times” of embedding identification codes other than when programming is being feed from camera 10 to mixing point 14.

**(2) Yaname et al.**

Yaname et al. teaches at page 15 “transmitting by multiplexing a control signal together with the identification signal on the program signal,” wherein the control signal is characterized by a “ $Q_E$  signal transmitted from Station Line ...[when  $Q_E$  is] received by Station M, Station M switches its circuit toward Station Line, and each lower station thereafter switches its circuit toward the next transmitting station in turn.” This switching function as initiated by the control signal ( $Q_E$ ) at the transmitter stations initiates communication to confirm “that the trouble did not occur between itself and the next higher station, troubleshooting can effect rational recovery action without damaging stations unnecessarily.”

**(3) Hetrich**

Hetrich teaches control signals “are preferably sent over the network lines during non-programming periods such as the normal one minute station breaks between programs,” (page 11). “These control signals may be used to start and stop audio recorders to record special programs for later broadcast, to accomplish the switching of



local and network programs, to interrupt programming for emergency announcements, etc.,” (page 10).

In response to the Office Action’s characterization of Hetrich, the Office Action on page 105 states that, “Hetrich discloses ... embedding control signals used for *identifying* the portions of the network programming which are to be recorded by the storage device of the affiliate stations for delayed re-broadcast,” (emphasis added). However, Hetrich fails to teach or suggest the control signals “identifying the portions of the network programming.” All Hetrich teaches the control signals are operative to do is to “start and stop audio recorders to record special programs for later broadcast, to accomplish the switching of local and network programs, to interrupt programming for emergency announcements,” (at page 10).

Additionally, the Office Action’s characterization of Hetrich on page 106 states that, “the control codes are effective to instruct the affiliate station to delay the network programming for some selected period of time.” Applicants traverse this interpretation of Hetrich’s disclosure since all that the control signals are disclosed to accomplish is to “start and stop audio recorders to record special programs for later broadcast, to accomplish the switching of local and network programs, to interrupt programming for emergency announcements,” (at page 10). There is no teaching or suggestion that the control signals “instruct” the network station to delay the network programming, but merely to start and stop a recording device at the network station. The disclosure anticipates the subsequent broadcasting of the special recorded programs, but fails to indicate that the record start/stop control signal additionally “instructs” the subsequent rebroadcasting.

**b) Absence of Comparison of Cited References with Applicants’ Claim Language**

The Office Action states that “considering pending claims of the group 3-82, that cover, *inter alia*, processes of controlling cable head end processes and monitoring of

those processes and combined medium presentation [Hazelwood] suggests the term ‘processor’ wherein the network station , the affiliate station, and the individual circuits which make up the network and affiliate stations, all function to process signals and hence are considered processors of a kind.”

The Office Action fails to analyze any of Applicants’ claim language in the rejection but rather chooses to summarize the specific contents of the instant 80 claims (numbers 3-82) with the statement, “processes of controlling cable head end processes and monitoring of those processes and combined medium presentation...wherein the network station , the affiliate station, and the individual circuits which make up the network and affiliate stations, all function to process signals and hence are considered processors of a kind.” The Examiner has failed to identify which, if any, claims actually fall into the group that stands rejected. Under 37 C.F.R. § 1.104(c), “If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected.” This rule requires that the Examiner at a minimum identify the claims subject to each ground of rejection.

When rejecting any claim, the Examiner is required to state the reason for such rejection. 35 U.S.C. § 132. Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection. *Chester v. Miller*, 906 F.2d 1574, 1578, 15 U.S.P.Q.2d 1333, 1337 (Fed. Cir. 1990). Under 37 C.F.R. § 1.104(c), “If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected. . . . The pertinence of each reference, if not apparent, must be clearly explained and *each rejected claim specified*.” (emphasis added) Section 707.07(i) of the M.P.E.P. sets forth, “In every letter, each pending claim should be mentioned by number, and its treatment or status given.” Accordingly, to state a valid rejection the Examiner must, at a minimum, specify by number the claims subject to each ground of rejection. The failure of the Examiner to identify by number the claims that may stand rejected results in a

statement that is so uninformative that it prevents Applicants from recognizing and seeking to counter the grounds for rejection. As the purported rejection fails to identify the claims rejected by number, the purported rejection fails to comply with the requirements of 35 U.S.C. § 132, 37 C.F.R. § 1.104(c) and M.P.E.P. § 707.07(i).

The Examiner has failed to provide information on which a *prima facie* case of obviousness could be based under 35 U.S.C. § 103(a).

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

*Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459, 467 (1966).

The Examiner has utterly failed to conduct the second inquiry set forth in *Graham v. Deere*. The Office Action includes no inquiry into the differences between the prior art and the claims at issue. "Ascertaining the differences between the prior art and the claims at issue requires interpreting the claim language." M.P.E.P. § 2141.02. The Examiner makes no attempt to interpret the claim language. The Examiner makes no attempt to determine whether *the pending claims* are obvious in view of the cited prior art. Rather, the Examiner merely asserts what he feels the applied references teach. The Office Action includes no showing that applied references teach all of the limitations of any of the pending claims. Thus, the Office Action provides insufficient information on which to base a *prima facie* case of obviousness.

Applicants respectfully submit that, notwithstanding the accuracy of the Examiner's characterization of the applied references or applicability of any of these references against the pending claims, for the above reasons the Office Action fails to state a *prima facie* case of obviousness. Therefore, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be withdrawn.

**c) Office Actions Improper Motivation for Combining References**

The Office Action on page 105 states, “pending claims of the 3-82, directed to, *inter alia*, processes of controlling cable head end processes and combined medium presentation, not suggested by [Hazelwood et al.], are further suggested [by] Yaname et al. and [Hetrich].” However, the Examiner never states what elements of Applicants’ claims were not suggested by the base reference Hazelwood et al. Applicants traverse this rejection as being improper and request withdrawal of the rejection.

**(1) Improper Combination of Hazelwood et al. in view of Yaname et al.**

Applicants contend that the Office Action improperly combined the switching control codes of Yaname et al. with Hazelwood et al. The disclosure of Hazelwood et al. is directed toward the storing of embedded program identifiers at either network affiliate stations or at viewer receiver stations. Hazelwood fails to teach or suggest any anticipation of transmitted control codes that alter transmitter stations’ circuits to switch output toward upline transmitter stations as taught by Yaname et al. The only disclosure in Hazelwood et al. regarding altering the functionality of a station is the reprogramming of the data collecting monitoring devices by a central data collection station via telephone lines. The Examiner cannot assume it is obvious to modify Hazelwood et al. in view of the control codes of Yaname et al. simply due to the fact that both disclosures have “identification codes” in common, when the base reference Hazelwood et al. fails to anticipate any need for the alleged modifying multiplexed control signal of Yaname et al. that changes the functionality of switching output at a transmitter station. Applicants traverse the rejection combining Hazelwood et al. and Yaname et al. for failing to provide proper motivation for combining the references since there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to

one of ordinary skill in the art to modify the reference to combine the teachings. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). M.P.E.P. 706.02(j).

**(2) Improper Combination of Hazelwood et al. and Yaname et al., further in view of Hetrich.**

Assuming *arguendo*, that it would have been obvious to modify Hazelwood et al. in view of Yaname et al., Applicants traverse the combination of Hetrich with the two mentioned references. Applicants contend that there was no motivation provided and that it would be improper to combine the recording start and stop control signals transmitted at station breaks of Hetrich with the transmitting station circuit switch control signals of Yaname et al. The Examiner cannot assume it would have been obvious to modify Hazelwood et al. and Yaname et al. further in view of Hetrich due to the fact that both disclosures have “control signals” in common. Yaname et al. discloses transmitting control codes for the purpose of switching output circuits at transmitter stations for the purpose of confirming that the transmission trouble (errors) did not occur between itself and the next higher transmitter station. There is no teaching or suggestion in Yaname et al. that the disclosed  $Q_E$  signal could be modified to anticipate and other function including the starting and stopping of recorders during non-program periods as disclosed by Hetrich. Applicants traverse the rejection combining Hetrich with Hazelwood et al. and Yaname et al. for failing to provide proper motivation for combining the references since there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference to combine the teachings. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). M.P.E.P. 706.02(j).

6. **Rejection over either one of the common subject matter suggested by Campbell et al., (WO 81/02961, abandoned parent application no. 135,987, and U.S. Pat. No. 4,536,791), in view of at least one or more of: Breeze “Television Line 21 Encoded Information and It’s Impact on Receiver Station Design”; Schnee, U.S. Pat. No. 4,290,142; and Zaboklicki, DE 2,904,891.**

Claims 3-82, that are directed to, *inter alia*, processes of controlling subscriber station processes and monitoring of those processes and of combined medium presentation and processes, are rejected under 35 U.S.C. § 103(a) as being unpatentable over either one of the common subject matter suggested by Campbell et al., (WO 81/02961, abandoned parent application no. 135,987, and U.S. Pat. No. 4,536,791), in view of at least one or more of: Breeze “Television Line 21 Encoded Information and It’s Impact on Receiver Station Design”; Schnee, U.S. Pat. No. 4,290,142; and Zaboklicki, DE 2,904,891.

**a) Office Action’s Failure to Identify Applicants Claim in the Rejection**

The Examiner has failed to identify which, if any, claims actually fall into the group that stands rejected. Under 37 C.F.R. § 1.104(c), “If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected.” This rule requires that the Examiner at a minimum identify the claims subject to each ground of rejection.

Applicants summarize the rejection:

- 1) The Office Action states, “Campbell et al. suggest (sic) the claims that cover an addressable cable television control system controlling television program and data signal transmission from the cable head end to the subscriber stations,” (at page 108).
- 2) The Office Action then characterizes the Campbell et al. reference with no specific mention to any claims at issue in the instant application.

3) The Office Action then states, "Claims that cover processes of controlling subscriber station processes and monitoring of those processes and of combined medium presentation and processes that are not suggested by Campbell et al. are suggested by Breeze," (at page 110).

4) The Office Action then characterizes the Breeze reference with no specific mention to any claims at issue in the instant application.

5) The Office Action then states, "Claims that cover processes of controlling subscriber station processes and monitoring of those processes and of combined medium presentation and processes that are not suggested by Campbell et al. and are not suggested by Breeze, are suggested by [Schnee]," (at page 111).

6) The Office Action then characterizes the Schnee reference with no specific mention to any claims at issue in the instant application.

7) The Office Action then states, "Claims that cover processes of controlling subscriber station processes and monitoring of those processes and of combined medium presentation and processes that are not suggested by Campbell et al. and are not suggested by Breeze, are not suggested by [Schnee], are suggested by [Zaboklicki]," (at page 111).

8) The Office Action then characterizes the Zaboklicki reference with no specific mention to any claims at issue in the instant application.

9) The Office Action states that "it would have been obvious ... for providing cable subscribers with enhanced interactive processes including enhanced conventional entertainment, providing useful information, and offering greater control to the cable head end operators." Applicants note that in the entire rejection, not one word of Applicants' instant claim language was addressed. It seems that the Examiner uses broad characterizations of general concepts found in the instant application and elsewhere in Applicants' co-pending applications to make this rejection.

Applicants traverse this grounds of this rejection as being improper for failing to identify Applicants' specific claim language that allegedly reads on the prior art.

When rejecting any claim, the Examiner is required to state the reason for such rejection. 35 U.S.C. § 132. Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection. *Chester v. Miller*, 906 F.2d 1574, 1578, 15 U.S.P.Q.2d 1333, 1337 (Fed. Cir. 1990). Under 37 C.F.R. § 1.104(c), “If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected. . . . The pertinence of each reference, if not apparent, must be clearly explained and *each rejected claim specified*.” (emphasis added) Section 707.07(i) of the M.P.E.P. sets forth, “In every letter, each pending claim should be mentioned by number, and its treatment or status given.” Accordingly, to state a valid rejection the Examiner must, at a minimum, specify by number the claims subject to each ground of rejection. The failure of the Examiner to identify by number the claims that may stand rejected results in a statement that is so uninformative that it prevents Applicants from recognizing and seeking to counter the grounds for rejection. As the purported rejection fails to identify the claims rejected by number, the purported rejection fails to comply with the requirements of 35 U.S.C. § 132, 37 C.F.R. § 1.104(c) and M.P.E.P. § 707.07(i).

The Examiner has failed to provide information on which a *prima facie* case of obviousness could be based under 35 U.S.C. § 103(a).

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

*Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459, 467 (1966).

The Examiner has utterly failed to conduct the second inquiry set forth in *Graham v. Deere*. The Office Action includes no inquiry into the differences between the prior art and the claims at issue. “Ascertaining the differences between the prior art and the claims at issue requires interpreting the claim language.” M.P.E.P. § 2141.02. The Examiner



makes no attempt to interpret the claim language. The Examiner makes no attempt to determine whether *the pending claims* are obvious in view of the cited prior art. Rather, the Examiner merely asserts what he feels the applied references teach. The Office Action includes no showing that applied references teach all of the limitations of any of the pending claims. Thus, the Office Action provides insufficient information on which to base a *prima facie* case of obviousness.

Applicants respectfully submit that, notwithstanding the accuracy of the Examiner's characterization of the applied references or applicability of any of these references against the pending claims, for the above reasons the Office Action fails to state a *prima facie* case of obviousness. Therefore, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be withdrawn.

**b) Rejection further in view of Zaboklicki.**

Zaboklicki discusses in general terms (as best understood by Applicants) an "interactive television system" (i) wherein "a local central unit is provided in the home television receivers on the receiver side; that central unit switches the data selection systems on the basis of the television viewer's answer and on the basis of the centrally transmitted digital processing program for the television segments (transmission fragments)" (English language translation of DE 29 04 981 A 1 at 10 ll. 13 - 18); (ii) with "individual variants of ... additional information ... passed on in the form of acoustic or sound signals in the television receiver in the infrared band to the individual infrared receivers" (*id.* at 11 ll. 2 - 7); (iii) with "participation of the television viewer in the centrally transmitted telecast in such a way that the output signals of the local central unit in the viewfinder of the television camera turn on the contours of the person is provided for by the director [whereby the shape of the viewer contained in these contours is blended into the main content]" (*id.* at page 12, lines 8 - 13); and (iv) wherein, "[i]n the case of telecasts where an answer or the opinion of the television viewers is desired... the

viewer's answer is put out parallel and converted into telephone signals... introduced into the subscriber telephone line... [and] supplied to the monitor in the television studio after statistical processing" (*id.* at 12, l. 13 through p. 13 l. 3).

In fact, Zaboklicki is so vague and indefinite in its description of the technology that virtually any reliance on the publication as prior art in the instant application can only be based on speculation and conjecture about the functionalities alleged to be provided by, or the method of operation of, the Zaboklicki system. Zaboklicki is not an enabling publication.

Applicants note the PTO has supplied and relies on a translation of German Patent publication No. DE 2904981 A 1 in formulating the rejections of the subject claims. Applicants have found that the applied German Patent publication is based on an earlier Polish patent application No. PL 204525 A filed February 9, 1978. In addition to the German publication, the earlier Polish application also forms the basis for French patent publication FR 2417226 A published October 12, 1979 and British patent publication GB 2016874 A published September 26, 1979.

After careful review of the Polish application and British publication, it is self evident that neither the translation provided by the PTO nor the British patent publication (presumably prepared or approved by Zaboklicki) indicates or suggests any method of operation of, or relationship between, the blocks shown in the various figures. In fact, it is difficult or impossible to determine what functions are being performed by the blocks shown in the various figures because many of the labels are not descriptive, failing to articulate or indicate the intended function. The written description does not cure this defect of the disclosure, failing to describe the functions or the interactions between the blocks. Examples of labels inadequately describing the structure of and function performed by the corresponding blocks are included in the following table.

| Ref. No | Label   | Description  |   |
|---------|---|--|---|
|         |   | English Language Translation of German Patent Publication  | British Patent Publication  |
| 4       | The circuit for the prescreening of information items for television viewers                                | preliminary screening of the information items for the television viewer   | distributes the information for televiewers   |
| 5       | The control circuit   | None   | output of control system 5 is additionally fed to the circuits 8 and 10 and is also applied to a circuit 11 for restoring the music signal  |
| 6       | The central unit (the processor, for example, integrated microprocessor)                                    | the output signals of the central unit 6 control a data selection circuit 8; energizes a sound signal switching unit 20 in at least one additional sound channel | output of circuit 3 is fed to a processor 6 ... [which] is also fed with signals representing the televiewer's answer from the circuit 2 [and] transmits a digital programme of manipulation, televiewers' answers and the successive identification data of ... individual fragments of the broadcast to a store or memory (RAM) 7; keyboard 12 feed into the processor 6 and the latter output to a transmitter of infra-red signals 13 which produces a remote control signal at 14; Digital data and audio signals with different variants of additional information are applied at 15 to the input of a receiver 16 of infra-red signals having an output in the form of digital data fed over line 17 to processor 6; switching-on of the selected audio channel as determined by the processor 6 |
| 10      | The circuit for video signal conversion and image illumination  | used to convert video signals and for image illumination   | for converting video signals and displaying a picture   |
| 11      | The circuit for sound signal restitution  | circuit for sound signal restitution   | for restoring   |
| 15      | The digital data and the phonics with the different variants of additional information                      | None   | input of receiver 16  |
| 19      | The command for sound turn-on in the corresponding channel  | command for a sound signal of a corresponding channel that is supplied to a circuit 20 for turning on the selected sound channel                                 | commands to switch-on the audio signal from a specific channel are fed over the command line 19 from the processor 6 to the receiver 20   |
| 27      | The switchover of the television channels for the prescreening of the corresponding fragments of a telecast | line for switching over television channels for preliminary screening of the corresponding fragments of a telecast   | television receiver 54 is fed over line 53 with control signals from the remote control signal receiver 52 and over the one 27 from the output system 49 of the processor   |

| Ref. No | Label   | Description   |   |
|---------|---|---|---|
|         |   | English Language Translation of German Patent Publication   | British Patent Publication  |
| 28      | The short term of call signal transmission during which the answer is delayed   | control signal for the delay of the answer, which represent the short span of time during which call signal transmission takes place and during that time span, the answer is delayed.  | [Control system 32] is also fed via 28 with a short delay signal for sending the dialing signals when the answer is postponed   |
| 29      | The prefix generator for transmission announcement of the television viewer's answer  | for a transmission announcement of the television viewer's answer with a subscriber generator 30 and with a circuit 31 to generate the television viewer's answer   | prefix generator for announcing the transmission of the televiewer's answer   |
| 35      | The circuit for the introduction of the initial data of the television viewers  | serves to put in initial data from the television viewers   | circuit for introducing the televiewer's answers  |
| 36      | The circuit for the prescreening of the digital data from the video signal  | causes the preliminary screening of the digital data of the video signal  | system for distributing the digital data from the video signals   |
| 38      | The multiplexer circuit   | supplies a signal for the subscriber telephone line 33.   | Output from the units 29 and 30, 31 and 32 are applied to a multiplexer 38 whose output 46 is in turn fed to a subscriber telephone line  |
| 40      | The circuit for the prescreening of the digital handling program (telesoftware) and the identification data of the individual fragments of the telecast | for the prescreening of digital processing programs and the identification data of the individual transmission fragments with the input circuits 39   | system for separation of the telesoftware and the identification data of the individual fragments of the broadcast  |
| 41      | The data selection circuit of the circuit for the comparison of the addresses of the teletext information items ....                                    | constitutes a data selection circuit or a circuit for the comparison of the addresses of text information, for example, page numbers. Local central unit 6 switches over the data selection circuits 41 as a result of the answers form a television viewer and the digital processing programs which are supplied to the central unit 39 by the output circuit | information selections system or a system for comparing the address of the teletext information, for example the page number, in conjunction with the local processor 6 for switching over the information selection system depending upon the televiewers answer and on the telesoftware |
| 42      | generator of the alphanumeric and graphic symbols   | generator for alphanumeric and graphic symbols  | alphanumeric and graphic character generator  |
| 43      | circuit for turning on one of the additional sound channels in the television receiver (54)   | switch-on or for the operation of additional sound channels of a television receiver 54   | audio channel switch for switching on the sound signal in the television receiver   |
| 45      | multiplexer circuit   | multiplexer circuit   | multiplexer of the receiver   |
| 46      | signal output for the subscriber telephone line   | None  | none  |

| Ref. No | Label  | Description  |  |
|---------|--|--|--|
|         |  | English Language Translation of German Patent Publication  | British Patent Publication   |
| 47      | circuit for the prescreening of the symbols for the control of the image illumination function                         | prefiltering or prescreening of the symbols for the control of image illumination  | system for distributing characters to the display control  |
| 48      | output circuit for symbols   | output circuit   | character output system  |
| 51      | multiplexer circuit in the viewfinder of the television camera for the application of the graphic symbols on the image | multiplexer circuit 51 in the viewfinder of a television camera is used to project the graphic symbols into the image of receiver 54 of the television camera that furthermore is connected to a receiver 52 for a remote-control signal | multiplexer system   |
| 54      | television receiver with at least one additional sound channel   | Receiver   | television receiver including an audio channel switch 43 for switching on the sound signal I the television receive and an output circuit 55 for the video signal  |
| 56      | teletext decoder with the additional data output after hamming decoder   | a video text decoder 56 with an additional data output (hamming decoder)   | teletex decoder having an additional data output behind the Hamming decoder comprising a control system 26, a system 36 for distributing the digital data from the video signals, a system 40 for separation of the telesoftware and the identification data of the individual fragments of the broadcast, an information selection system 41, (or a system for comparing the address of the teletex information, for example the page number, in conjunction with the local processor 6 for switching over the information selection system depending upon the televiewers answer and upon the telesoftware), an RAM memory 44, a system 57 for distributing control characters, (for example no display), an alphanumeric and graphic character generator 42, a system 47 for distributing characters to the display control and a character output system 48. |
| 57      | circuit for the prescreening of the control symbols, for example, a command: do not illuminate                         | A circuit 57 in decoder 56 is used for the prefiltering of control signals or control commands (For example, do not illuminate.)   | system for distributing control characters, (for example no display)   |

It is established that prior art must be enabling. *Rockwell Int'l. Corp. v. United States*, 147 F.3d 1358, 1365, 27 U.S.P.Q.2d 1027 (Fed. Cir. 1998). "In order to render a

claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method.” *Beckman Industries, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551, 13 U.S.P.Q.2d 1301, 1304 (Fed. Cir. 1989) (citing *In re Payne*, 606 F.2d 303, 314, 203 U.S.P.Q. 245, 255 (CCPA 1979)). Accordingly, in *Beckman*, held as a correct statement of the law were jury instructions that stated, “References relied upon to support a rejection for obviousness must provide an enabling disclosure. That is to say, they must place the claimed invention in the possession of the public.” *Id.* at 1550-51, 13 U.S.P.Q.2d at 1303-4. The Federal Circuit has observed that “even if the claimed invention is disclosed in a printed publication, that disclosure will not suffice as prior art if it was not enabling.” *In re Donohue*, 766 F.2d 531, 533, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985) (citing *In re Borst*, 345 F.2d 851, 855, 145 U.S.P.Q. 554, 557 (C.C.P.A. 1965), cert. denied, 382 U.S. 973, 148 U.S.P.Q. 771 (1966) (“the disclosure must be such as will give possession of the invention to the person of ordinary skill”)). *See also In re Epstein*, 32 F.3d 1559, 1568, 31 U.S.P.Q.2d 1817, 1823 (Fed. Cir. 1994); *Reading & Bates Construction Co. v. Baker Energy Resources Corp.*, 748 F.2d 645, 651-52, 223 U.S.P.Q. 1168, 1173 (Fed. Cir. 1984); *Preemption Devices, Inc. v. Minnesota Mining & Manufacturing Co.*, 732 F.2d 903, 906, 221 U.S.P.Q. 841, 843 (Fed. Cir. 1984).

If anything is clear, it is that Zaboklicki does not place the technology of Applicants’ invention into the hands of the public. The reference to Zaboklicki at most presents some block diagrams which, as best understood, are directed to the four functions previously outlined. The details of these functionalities or how they are accomplished are not described in sufficient detail or with sufficient clarity to constitute an enabling disclosure.

Therefore, Applicants respectfully request the withdrawal of this rejection of claims 3-82 under 35 U.S.C. § 103(a).

7. **Rejection further in view of one or more of: Hazelwood et al., Yaname et al., Hetrich, Marsden, Young et al., "Journal of SMPTE" Oct. 1971, U.S. Pat. No. 3,761,888 to Flynn, U.S. Pat. No. 3,627,914 to Davis, Tunmann et al., U.K. Pat. No. 959,374 to Germany, Byloff, Chiddix, Skilton, Schiller et al., Zettl, Vikene, U.S. Pat. No. 4,547,804 to Greenberg, Jeffers et al., Diederich, Campbell et al. (WO 81/02961, abandoned U.S. application no. 135,987, and U.S. Pat. No. 4,536,791), Kazama et al., Gosch, Stern, Breeze, Barlow, Millar, U.S. Pat. No. 4,725,886 to Galumbeck et al., "CBS/CCETT North American Broadcast Teletext Specification," Zaboklicki, U.S. Pat. No. 4,064,490 to Nagel, U.S. Pat. No. 4,251,691 to Kakihara, Hedger et al., Anderson, Gunn, Gaucher, U.S. Pat. No. 4,290,142 to Schnee et al.**

Claims 3-82, that are directed to, *inter alia*, either processes of controlling affiliate stations and processes and monitoring of those processes and combined medium presentation or processes of controlling subscriber stations and method and process for monitoring and providing combined medium presentations, that fall out each particular determining group members of the group of claims described in rejection above, the groups are rejected further in view of one or more of: Hazelwood et al., Yaname et al., Hetrich, Marsden, Young et al., "Journal of SMPTE" Oct. 1971, U.S. Pat. No. 3,761,888 to Flynn, U.S. Pat. No. 3,627,914 to Davis, Tunmann et al., U.K. Pat. No. 959,374 to Germany, Byloff, Chiddix, Skilton, Schiller et al., Zettl, Vikene, U.S. Pat. No. 4,547,804 to Greenberg, Jeffers et al., Diederich, Campbell et al. (WO 81/02961, abandoned U.S. application no. 135,987, and U.S. Pat. No. 4,536,791), Kazama et al., Gosch, Stern, Breeze, Barlow, Millar, U.S. Pat. No. 4,725,886 to Galumbeck et al., "CBS/CCETT North American Broadcast Teletext Specification," Zaboklicki, U.S. Pat. No. 4,064,490 to Nagel, U.S. Pat. No. 4,251,691 to Kakihara, Hedger et al., Anderson, Gunn, Gaucher, U.S. Pat. No. 4,290,142 to Schnee et al.

**a) The Provisional Rejection over Numerous References is Improper**

Paragraph 19 of the Office Action it is stated: “Pending claims of the group 3-82 that are directed to, *inter alia*, either process of controlling affiliate stations and processes and monitoring of those processes and combined medium presentation or processes of controlling subscriber stations and method and process for monitoring and providing combined medium presentations, or both, that fall out each particular determined group members of the group of claims described in rejection above, the groups are provisionally rejected further in view of one or more of [some thirty-six listed references].” This statement clearly fails to state a proper rejection. This statement fails to provide reasons for a rejection and is clearly so uninformative that it prevents the applicant from recognizing and seeking to counter any potential grounds for rejection. Applicants cannot determine to what claims this statement is applicable. The Examiner has failed to cite to the best references and avoid merely cumulative references. The references cited include at least some that cannot be relied upon as prior art against the pending claims. The Examiner has failed to explain the pertinence of each reference and to specify each rejected claim. The Office Action includes an explanation of the Examiner’s understanding of the level of skill in the art in terms of some of the cited references. However, this explanation fails to include the elements of a proper rejection under 35 U.S.C. § 103(a). Furthermore, the statement does not purport to be a rejection, but rather states that groups are *provisionally* rejected. Applicants find no rejection in this statement by the Examiner to which a response from Applicants is required.

The Examiner has no authority to “provisionally” reject claims in view of one or more of a large group of generally cumulative references. The Office Action includes no reference to any authority for this “provisional” rejection. The M.P.E.P. provides for a provisional rejection only in the situation where a pending application upon issuance will become valid prior art, against provisionally rejected claims, under 35 U.S.C. § 102(e), 35



U.S.C. § 101 (statutory double patenting), or the judicially created doctrine of obvious type double patenting. The pending application used in the provisional rejection must have a common assignee or common inventor with the application containing the provisionally rejected claims. *See*, M.P.E.P §§ 706.02(f), 706.02(k), and 804. The provisional rejection is permitted to alert applicants that they should expect an actual rejection on the merits if and when the applied pending application issues. There is no authority nor is there any good reason to issue a provisional rejection over references that are issued patents or have been published. The Examiner appears to attempt to alert Applicants to potential rejections that will be made once the Examiner has fully reviewed and analyzed the instant application to determine whether the claims define a useful, novel, non-obvious, and enabled invention that has been clearly described in the specification. However, the Examiner should clearly articulate any rejection early in the prosecution process so Applicants have the opportunity to provide evidence of patentability and otherwise respond completely at the earliest opportunity. M.P.E.P. § 706. The Examiner may not reserve rejections for future actions. “The examiner’s action will be complete as to all matters.” 37 C.F.R. § 1.104(b). “If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable *will* be rejected.” 37 C.F.R. § 1.104(c)(1)(emphasis added). As this purported “provisional” rejection is asserted under no authority and fails to clearly articulate any rejection, Applicants respectfully submit that this “provisional” rejection has no effect on the instant application.

**b) Rejection under 35 U.S.C. § 103 is Improper**

Additionally, this statement fails to provide reasons for a rejection and is clearly so uninformative that it prevents the applicant from recognizing and seeking to counter any potential grounds for rejection. Applicants cannot determine to what claims this statement is applicable. The Examiner has failed to cite to the best references and avoid

merely cumulative references. The references cited include at least some that cannot be relied upon as prior art against the pending claims. The Examiner has failed to explain the pertinence of each reference and to specify each rejected claim. The Office Action includes an explanation of the Examiner's understanding of the level of skill in the art in terms of some of the cited references. However, this explanation fails to include the elements of a proper rejection under 35 U.S.C. § 103(a).

The Examiner has failed to identify which, if any, claims actually fall into the group that stands rejected. Under 37 C.F.R. § 1.104(c), "If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected." This rule requires that the Examiner at a minimum identify the claims subject to each ground of rejection.

When rejecting any claim, the Examiner is required to state the reason for such rejection. 35 U.S.C. § 132. Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection. *Chester v. Miller*, 906 F.2d 1574, 1578, 15 U.S.P.Q.2d 1333, 1337 (Fed. Cir. 1990). Under 37 C.F.R. § 1.104(c), "If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected. . . . The pertinence of each reference, if not apparent, must be clearly explained and *each rejected claim specified*." (emphasis added) Section 707.07(i) of the M.P.E.P. sets forth, "In every letter, each pending claim should be mentioned by number, and its treatment or status given." Accordingly, to state a valid rejection the Examiner must, at a minimum, specify by number the claims subject to each ground of rejection. The failure of the Examiner to identify by number the claims that may stand rejected results in a statement that is so uninformative that it prevents Applicants from recognizing and seeking to counter the grounds for rejection. As the purported rejection fails to identify the claims rejected by number, the purported rejection fails to comply with the requirements of 35 U.S.C. § 132, 37 C.F.R. § 1.104(c) and M.P.E.P § 707.07(i).

The Examiner has failed to provide information on which a *prima facie* case of obviousness could be based under 35 U.S.C. § 103(a).

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

*Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459, 467 (1966).

The Examiner has utterly failed to conduct the second inquiry set forth in *Graham v. Deere*. The Office Action includes no inquiry into the differences between the prior art and the claims at issue. “Ascertaining the differences between the prior art and the claims at issue requires interpreting the claim language.” M.P.E.P. § 2141.02. The Examiner makes no attempt to interpret the claim language. The Examiner makes no attempt to determine whether *the pending claims* are obvious in view of the cited prior art. Rather, the Examiner merely asserts what he feels the applied references teach. The Office Action includes no showing that applied references teach all of the limitations of any of the pending claims. Thus, the Office Action provides insufficient information on which to base a *prima facie* case of obviousness.

Applicants respectfully submit that, notwithstanding the accuracy of the Examiner’s characterization of the applied references or applicability of any of these references against the pending claims, for the above reasons the Office Action fails to state a *prima facie* case of obviousness. Therefore, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be withdrawn.

#### **I. Response to Examiner’s Administrative Requirement**

Applicants respectfully traverse the requirements imposed by the Examiner in the Office Action at page 138.

The Examiner requires Applicants to either:

- (1) file terminal disclaimers in each of the related 329 applications terminally disclaiming each of the other 329 applications; or
- (2) provide an affidavit attesting to the fact that all claims in the 329 applications have been reviewed by applicant and that no conflicting claims exist between the applications; or
- (3) resolve all conflicts between claims in the related 329 applications by identifying how all the claims in the instant application are distinct and separate inventions from all the claims in the above identified 329 applications.

In addition, Examiner states that failure to comply with any one of these requirements will result in abandonment of the application.

Applicants traverse this requirement for the reasons stated in Section II C of the Amendment and Request for Reconsideration filed September 18, 1998 in application number 08/470,571. Further, Applicants have fully responded to the re-imposition of this requirement in the Petition To The Commissioner Under 37 C.F.R. § 1.181 filed March 7, 2000, which requests, *inter alia*, that this improper requirement be withdrawn.

**J. Response to Obviousness-Type Double Patenting Rejection**

Applicants respectfully request that the Examiner reconsider and withdraw his rejection based on obviousness-type double patenting on two separate grounds.

1. The Examiner has totally confused and misapplied the established law of double patenting and, further, has failed to follow the mandates of the Manual of Patent Examining Procedure as to double patenting rejections.

2. The Examiner has also failed to analyze the pending claims on a limitation-by-limitation basis to demonstrate that no patentable distinctions exist between the pending claims and those in the issued Harvey patents.

**1. PTO Assertions in Office Action mailed January 7, 2000**

The Examiner has rejected claims 3-82 of the application under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 4,684,490 (Harvey I); claims 1-5 of U.S. Patent No. 4,704,725 (Harvey II); claims 1-25 of U.S. Patent No. 4,965,825 (Harvey III); claims 1-26 of U.S. Patent No. 5,109,414 (Harvey IV); claims 1-71 of U.S. Patent No. 5,233,654 (Harvey V); and claims 1-56 of U.S. Patent No. 5,335,277 (Harvey VI), in view of at least one or more of a list of over 30 prior art references from pages 139-148.

In the Office Action at page 148, the Examiner rejects 3-82 under obviousness-type double patenting as being unpatentable over any single claim or combination of claims are “no more than an obvious variation of the patented claims when the teachings discussed throughout this action are considered.” The Examiner attempts to assert a catch-all rejection by incorporating all arguments and allegations discussed throughout the pages of the Office Action. Again, the Examiner provides no authority for this sweeping new ground for rejecting claims under obviousness-type double patenting.

The Examiner’s application of obviousness-type double patenting standard represents an erroneous and misapplied interpretation of existing case law and is contrary to patent examining procedure. First, the Examiner has confused and misapplied the established law of double patenting and has failed to follow the mandates of the M.P.E.P. as to double patenting rejections. Secondly, the Examiner has also failed to analyze the pending claims on a limitation-by-limitation basis to demonstrate that no patentable distinctions exist between the pending claimed and those issued in the Harvey patents as required by the M.P.E.P.

Based on the following discussion, Applicants respectfully request the withdrawal of these rejections.

## 2. The Scope of the Double Patenting Doctrine

The prohibition against double patenting is a judicial doctrine based on the language of 35 U.S.C. § 101, which specifies that an inventor who invents “any new and useful process, machine, manufacture, or composition of matter...may obtain a patent therefor.” In *Miller*<sup>1</sup>, the U.S. Supreme Court held the term “a patent” to mean, “two valid patents for the same invention cannot be granted either to the same or to a different party.”<sup>2</sup> Therefore, the claims in a second patent must be patentably distinct from the claims in a first patent or the second patent would be an improper extension of the first.

As the preclusion is to obtaining two patents on the same invention or an obvious modification of the same invention, the sole question is whether by examining the scope of the claims, one has attempted to claim the same subject matter twice, or an obvious variation. No prohibition exists against a second patent on subject matter that is disclosed but not claimed in the first patent.

Under 35 U.S.C. § 120, a patent applicant may submit additional claims in a subsequent application which are supported by the disclosure in the original applications’ specification. A proper continuation application and its original application are considered “parts of the same transaction, and both as constituting one continuous application, within the meaning of the law.”<sup>3</sup> Furthermore, 35 U.S.C. § 120 does not place a definite time limit on filing a continuing application. Rather, all that is required to preserve an earlier effective filing date as to common subject matter is copendency or a continuous chain of copendency.

The double patenting doctrine prevents an extension of a patent term which would occur if successive patents were allowed on the same invention or obvious variants.

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<sup>1</sup> *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894).

<sup>2</sup> *Id.* at 197.

<sup>3</sup> *In re Hogan*, 449 F.2d 595, 603 (CCPA 1977)(quoting *Godfrey v. Earnes*, 68 U.S. 317, 325-6 (1864)).

However, if two patents contain the same disclosure, but claim different inventions or nonobvious variations, double patenting does not exist.

### 3. Patent Office Procedure

The U.S. Patent and Trademark Office (“PTO”) has specified a procedure in the Manual of Patent Examining Procedure (M.P.E.P.) for Examiners to follow in establishing a *prime facie* case of double patenting. In determining whether a proper basis exists for a double patenting rejection, the Examiner must determine whether:

1. A double patenting rejection is prohibited by the third sentence of 35 U.S.C. § 121 related to divisional applications,
2. A statutory basis exists (i.e., whether same-invention double patenting is present), or
3. A non-statutory basis exists (i.e., whether obviousness-type double patenting is present).<sup>4</sup>

Assuming the application is not a divisional application, the Examiner must establish in step 2 that the same invention is being claimed twice. The Court specified in *In re Vogel*, 422 F.2d 438, 164 U.S.P.Q. 619 (C.C.P.A. 1970), that in determining same-invention double patenting analysis, one must ask “is the same invention being claimed twice?...[The] “invention” here means what is defined by the claims, whether new or old, obvious or unobvious....By the “same invention” we mean identical subject matter.”<sup>5</sup> The court stated “that claims may be differently worded and still define the same invention.”<sup>6</sup> In conclusion, the court found “the only objective test” for same-invention double patenting as,

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<sup>4</sup> M.P.E.P. § 804.

<sup>5</sup> *In re Vogel*, 422 F.2d at 441.

<sup>6</sup> *Id.*

whether one of the claims could be literally infringed without literally infringing the other. If it could be, the claims do not define identically the same invention.<sup>7</sup>

If there is no same-invention double patenting, then the Examiner must establish in step 3 obviousness-type double patenting wherein the grant of a patent with the claims in the application would unjustly extend the rights granted by the first patent.

#### **4. Nonstatutory Double Patenting**

In defining nonstatutory double patenting, the M.P.E.P. provides three types of nonstatutory-type double patenting based on the judicial doctrine, which include one-way obviousness, two-way obviousness<sup>8</sup>, and nonobviousness rejections.<sup>9</sup>

Under the M.P.E.P. requirements, if the application at issue is the later filed application, only a one-way determination of obviousness is needed to resolve the issue of double patenting. The issue to be determined is whether the invention defined in a claim in the application is an obvious variation of the invention defined in a claim of the patent. *See, e.g., In re Berg*, 46 U.S.P.Q.2d 1226 (Fed. Cir. 1998). The M.P.E.P. mandates that unless a claimed invention in the application is obvious over a claimed invention in the patent, an Examiner should make no double patenting rejection of the obviousness-type. Thus, the sole issue is the scope of the inventions as defined by the claim language in the patent and later filed application.

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<sup>7</sup> *Id.*

<sup>8</sup> A two-way obviousness double patenting rejection arises in the specific instance where the claims of a patent application are being compared with the claims of a later filed but earlier issued patent. This is not the case with respect to the present double patenting rejection.

<sup>9</sup> M.P.E.P. § 804. Nonobviousness-type double patenting rejections arise in circumstances as described in *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). With respect to the instant application, a nonobviousness-type double patenting rejection was made on February 6, 1997, and withdrawn in the Office Action mailed on March 31, 1998.



a) **Standard for Determining One-Way Obviousness-Type  
Double Patenting**

*In re Kaplan*<sup>10</sup>, the Federal Circuit specified that an obviousness-type double patenting rejection rests on the prohibition against issuance of a second patent that would continue protection, beyond the expiration date of the first patent, or a mere variation of the previous patented invention that would have been obvious to those of ordinary skill in the relevant art.

Thus, in establishing a *prima facie* case of obviousness-type double patenting, the Examiner must,

1. Identify the inventions claimed in the claims under consideration and in the patent claims,
2. Establish that any variation(s) between the inventions claimed in the claims under consideration and the earlier-issued patent claims would have been obvious to person of ordinary skill in the art, and
3. Establish a *prima facie* case of obviousness.<sup>11</sup>

To summarize, the Examiner must show that (1) the inventions claimed (2) are not patentably distinct based on (3) a *prima facie* showing of obviousness. Instead, the Examiner has provided bald statements that obvious variations exist. The mere finding that the claims themselves are obvious variations, without establishing that the alleged variations would have been obvious, cannot properly support an obviousness-type double patenting rejection.

In the Office Action under paragraphs 22-23, the Examiner has failed to establish a *prima facie* showing of obviousness-type double patenting in the rejection of 3-82. In particular, the Examiner has not identified the scope of the inventions of the instant

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<sup>10</sup> *In re Kaplan*, 789 F.2d 1574, 229 USPQ 678 (Fed. Cir. 1986).

<sup>11</sup> See *In re Longi*, 759 F.2d 887, 225 USPQ 645, 651 (Fed. Cir. 1985) (Examiner must provide *prima facie* case of obviousness for obviousness-type double patenting rejection. The burden then shifts to the Applicant to rebut the *prima facie* case).

application and the patents as determined by the claims. Secondly, the Examiner has not positively identified any variations in the claims of the instant application and the claims of the patent. Examiner has provided broad allegations that obvious variants exist, but fail to specifically state these allegedly obvious variants. Thirdly, the Examiner has not shown a *prima facie* case of obviousness under the requirements of 35 U.S.C. § 103. The Examiner has not indicated proper motivation in making the alleged obvious modifications. Since no motivation is provided, it may follow that the variations are not obvious. Moreover, monopolies would not be extended on the same claimed invention.

**(1) Identifying the Inventions Claimed**

**(a) Scope of the Inventions as Defined by the Claim Language**

The C.C.P.A. in *In re Vogel*<sup>12</sup> summarized this step by asking, “does any claim in the application define merely an obvious variation of an invention disclosed and claimed in the patent?”<sup>13</sup> The analysis is based on what the claim defines, and not merely the claim language itself. This first step in the analysis should not focus on what the claim language *discloses*, but on rather what the claim language *defines*.<sup>14</sup> As noted by the Federal Circuit,

it is important to bear in mind that comparison can be made only with what invention is *claimed* in the earlier patent, paying careful attention to the rules of claim interpretation to determine what invention a claim *defines* and not looking to the claim for anything that happens to be mentioned in it *as though it were a prior art reference*.<sup>15</sup>

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<sup>12</sup> *In re Vogel*, 422 F.2d 438, 164 USPQ 619.

<sup>13</sup> *Id.*, 164 USPQ at 622.

<sup>14</sup> *General Foods Corp. v. Studiengesellschaft Kohle mbh*, 972 F.2d 1272, 23 USPQ 1893, 1845 (Fed. Cir. 1992).

<sup>15</sup> *Id.*, 972 F.2d at 1280.

[T]he fundamental rule of claim construction, that what is claimed is what is *defined by the claim taken as a whole*, every claim limitation...being material<sup>16</sup>

...

[P]atent claims are looked to only see what *has been patented*, the subject matter which *has been protected*, not for something one may find to be disclosed by reading them<sup>17</sup>

Rather than identifying the scope of the inventions as defined by the claims, the Examiner has assumed an obviousness-type double rejection based on two claims in separate applications supported by the same embodiment of the applications' common specification, as set forth in paragraph 23. The basis for the Examiner's obviousness-type double patenting rejection is premised on a common embodiment. There is no statutory basis for this improper interpretation of obviousness-type double patenting.

The Examiner's "same embodiment" basis for obviousness-type double patenting is erroneous for at least the following reasons. First, two claims in two separate applications may find support in the same embodiment while claiming inventions that are patently distinct. An embodiment as described by a common specification and drawings may fully disclose a wide range of details and limitations. However, it may not follow that separate claims, which are supported by a common embodiment, are also identical in scope, as assumed by the Examiner. Second, by relying on a common embodiment, the Examiner has improperly treated the specification as prior art. Finding a claimed invention to be an obvious variation of patented claims by treating the patent disclosure

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<sup>16</sup> *Id.*

<sup>17</sup> *Id.* citing *In re Aldrich*, 398 F.2d 855, 859, 158 USPQ 311, 314 (CCPA 1968).

as though it is prior art has been repeatedly held as impermissible.<sup>18</sup> The use of an applicant's invention disclosure as prior art against him is improper.<sup>19</sup> By broadly rejecting pending claims under obviousness-type double patenting without analyzing the claims of the inventions, the Examiner has misapplied and confused the law of obviousness-type double patenting.

**(b) Proper Use of Specification**

Because the obviousness-type double patenting rejection requires claim interpretation, the Examiner may use the specification in a limited capacity to assist in interpreting what the claim language defines. The patent disclosure cannot be used as prior art, but the disclosure can be used to (1) determine the meaning of terms in a claim and may also be used as required to (2) answer the above question, "whether the claim in the application defines merely an obvious variation of the invention disclosed and claimed in the patent."<sup>20</sup> With respect to "the invention disclosed and claimed in the patent," the Federal Circuit stated in *Vogel*,

We recognize that it is difficult, if not meaningless, to try to say what is or is not an obvious variation of a claim. A claim is a group of words defining only the boundary of the patent monopoly....The disclosure, however, sets forth at least one tangible embodiment within the claim, and it is less difficult and more meaningful to judge whether that thing has been modified in an obvious manner. It must be noted that this use of the disclosure is not in contravention of the cases forbidding its use as prior art, nor is it applying the patent as a reference under 35 U.S.C. § 103, since only the disclosure of the invention claimed in the patent may be examined.<sup>21</sup>

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<sup>18</sup> *In re Kaplan*, 229 USPQ at 683.

<sup>19</sup> *Id.*

<sup>20</sup> *In re Vogel*, 422 F.2d at 441.

<sup>21</sup> *Id.*, 422 F.2d at 442.

Therefore, it is proper to identify the invention claimed in the patent by using *exclusively only the portion(s) of the disclosure supporting the claimed invention*.

Alternately, it is improper to make a double patenting rejection when the rejection relies on specification support other than the specific portion(s) of the disclosure supporting the claimed invention.

It has been repeatedly held that use of disclosure of a patent cited in support of a double patenting rejection cannot be used as through it were prior art, even where the disclosure is found in the claims. *See, e.g., Braat*, 937 F.2d at 594 n.5, 19 U.S.P.Q. at 1293 n.5 (“The patent disclosure must not be used as prior art”); *Vogel*, 422 F.2d at 442, 164 USPQ at 622 (in considering obviousness-type double patenting, “the patent disclosure may not be used as prior art”); *In re Plank*, 399 F.2d 241, 242, 158 U.S.P.Q. 328, 329 (C.C.P.A. 1968) (“Its claims are used as the basis for a double patenting rejection. It is not a prior art reference”); *In re Aldrich*, 398 F.2d 855, 859, 158 U.S.P.Q. 311, 314 (C.C.P.A. 1968) (“[P]atent claims are looked to only to see what has been patented, the subject matter which has been protected, not for something one may find to be disclosed by reading them.”)

In the instant case, the Examiner has improperly relied on the specification in making the obviousness-type double patenting rejection. Whether support is provided for the claim language is an issue separate from the scope of the claims in the determination of a double patenting rejection. The Examiner has confused the issue of claim support with the issue of claim interpretation in determining whether obviousness-type double patenting exists. Claim interpretation is limited to what the claim language defines as the scope of the invention. By doing so, the Examiner has relied on specification support

other than the specific portions of the disclosure supporting the claimed invention.

Applicants have failed to follow the mandates as expressed in the M.P.E.P. thereby failing to establish a *prima facie* case of double patenting of the obviousness-type.

According to *In re Vogel*, one must first “determine how much of the patent disclosure pertains to the invention claimed in the patent” because only “[t]his portion of the specification supports the patent claims and may be considered.” The Examiner has disregarded this critical step in his analysis of the obviousness-type double patenting rejection.

**(c) Best Mode**

The scope of the invention is determined by the claim language. The best mode disclosed in the specification as interpreted by the Examiner does not define the boundaries of the claims when determining double patenting of the obviousness-type. Examiner has again improperly relied on the specification to interpret the scope of the invention while failing to analyze the pending claims on a limitation-by-limitation basis to demonstrate that no patentable distinctions exist between the pending claims and those in the issued Harvey patents.

In *In re Schneller*, 397 F.2d 350, 158 U.S.P.Q. 210 (C.C.P.A. 1968), the Schneller patent disclosed elements A, B, C, X, and Y as the best mode and claimed A, B, C, and X which covered other features incorporated in the claim because of the term “comprising”, thus effectively covering the combination A, B, C, X, and Y. The later filed application claimed elements A, B, C, and Y and elements A, B, C, X, and Y. Thus, making the new combination would merely exercise skill or ingenuity expected of a person with ordinary skill in the art because X and Y were both known in the art.

The court in *In re Schneller* noted the uniqueness of the factual circumstances surrounding the element composition of the application which involved the substitution

of element X for element Y, rather than the addition or subtraction of an element from the patent's claims.<sup>22</sup> The court went on to state that "[this] is not a case of an improvement or modification invented after filing . . . Hence it is not the usual 'obviousness-type' double patenting case."<sup>23</sup> Thus, the court limited the applicability of this holding. The Examiner has not offered any proof that *Schneller*'s use of the disclosed best mode may be properly applied to the facts of the instant application. More specifically, the instant case does not involve the substitution of one element (X) for another element (Y) where the rest of the claimed subject matter (ABC) is well known and where the two elements (X and Y) are also known in the art.

While *In re Schneller* relied on a disclosed best mode of ABCXY in finding a non-statutory double patenting rejection, the Examiner's use of a best mode to find all variations obvious is unwarranted. An allegation of an improper extension of a unified system monopoly cannot be supported without examining the scope of the claims. In *In re Schneller*, the court specifically cited and analyzed both the claims in the patent and the elements in the claims in the *Schneller* application. The court then clearly demonstrated how the claims in the patent read on the claims in the application to support the double patenting rejection. The Office Action fails to provide such an analysis.

**(d) Means Plus Function**

In interpreting "means plus function" language, the Federal Circuit held *In re Lonardo*, 119 F.3d 960, 43 U.S.P.Q.2d 1262 (Fed. Cir. 1997) that under 35 U.S.C. § 112, sixth paragraph<sup>24</sup>, correct interpretation of the means plus function element must be in light of the disclosed structure for implementing the function, and in a manner that is

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<sup>22</sup> 397 F.2d at 353-54.

<sup>23</sup> *Id.*

<sup>24</sup> See *In re Donaldson*, 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1849 (Fed. Cir. 1994).

expressly recited in the claim.<sup>25</sup> The PTO must apply 35 U.S.C. §112, sixth paragraph, in appropriate cases, and give claims their broadest reasonable interpretation in light of and consistent with the written description of the invention in the application.<sup>26</sup>

**(2) Establishing Variations between the Invention Claimed  
and the Invention Defined in the Patent Claims**

Based on the proper identification of each of the inventions, *supra*, the Examiner then must identify the variation(s) between the inventions being claimed in the application and the invention as defined by the claims in the patent.

As discussed above, the Examiner has not properly identified the inventions. In fact, the Examiner has failed to analyze and interpret the claims on a limitation-by-limitation basis to demonstrate that no patentable distinctions exist between the pending claims and those in the issued Harvey patents. Rather, in an attempt to address the variations between the inventions, the Examiner provides broad allegations that “no pending claim is more than an obvious variation...” (Office Action at 148.) However, the Examiner has failed to specifically identify these variations. Such blanket assertions do not fulfill the requirement of identifying variations between the invention claimed and the invention defined by the patent claims, as mandated by the M.P.E.P.

As to paragraph 23, the Examiner presents a weak attempt at establishing variations between the invention claimed and the invention defined in the patent claims. More specifically, the Examiner states that “[t]he differences ... [are] suggested by the art.” (Office Action at 148.) The Examiner erroneously believes that incorporating any differences merely **suggested** (and not necessarily explicitly stated) by any and all prior art discussed throughout entire Office Action is proper. The Examiner is required to identify the variations between the inventions being claimed and the invention as defined

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<sup>25</sup> *In re Lonardo*, 43 USPQ2d at 1267.

<sup>26</sup> *In re Donaldson*, 16 F.3d at 1194.



by the patent claims. Placing the burden on Applicants to sift through the Office Action to locate any and all discussions of the differences suggested, explicitly and/or implicitly, by the prior art is contrary to law. There is no statutory basis for Examiner's version of identifying variations between the sets of claims at issue.

Applicants provide Appendix B herewith, which identify Applicants' patentable subject matter of the instant claims over specific Applicants' patented claims in response to Appendix A of the Office Action.

**(3) Variations Would Have Been Obvious to a Person of Ordinary Skill in the Art**

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966) that establish a background for determining obviousness under 35 U.S.C. § 103 are employed when making an obviousness-type double patenting analysis. However, the "patent principally underlying the double patenting rejection is not considered prior art."<sup>27</sup> The factual inquiries are summarized as follows:

- (A) Determine the scope and content of the patent claim and the prior art relative to the claim in the application at issue;
- (B) Determine the differences between the scope and content of the patent claim and the prior art as determined in (A) and the claim in the application at issue;
- (C) Determine the level of ordinary skill in the pertinent art; and
- (D) Evaluate any objective indicia of nonobviousness.<sup>28</sup>

Additionally, the Federal Circuit held in *Kaplan* that obviousness-type double patenting rejections must include clear evidence to establish why an alleged variation of an invention claimed in a prior patent would have been obvious.

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<sup>27</sup> *In re Longi*, 759 F.2d at 892, n.4 (citing *In re Braithwaite*, 379 F.2d 594, 600 n.4, 54 CCPA 1589, 154 USPQ 29 (CCPA 1967)).

<sup>28</sup> M.P.E.P. § 804 (II) B (1).

[T]here must be some clear evidence to establish why the variation would have been obvious which can properly qualify as “prior art.” Even if obviousness of the variation is predicated on the level of skill in the art, prior art evidence is needed to show what the level of skill was.<sup>29</sup>

Otherwise, if no clear prior art evidence establishes that the variation(s) in the application claims are obvious over the invention defined by the claims of the patent, one can assume that the characteristic of the claims including the variation(s),

appear that the invention covered by the later patent was a separate invention, distinctly different and independent from that covered by the first patent; in other words, it must be something substantially different from that comprehended in the first patent. It must consist in something more than a mere distinction of the breadth or scope of the claims of each patent.<sup>30</sup>

As discussed above, the Examiner has failed to properly identify the inventions as claimed and has further failed to identify the variations as required for a proper obviousness-type double patenting rejection. Nonstatutory double patenting is intended to prevent prolongation of the patent term by prohibiting the extension of patent monopolies in successive patents. While the prohibition of extending patent monopolies is a policy concern, a statement of motivation for establishing obviousness under 35 U.S.C. § 103 is nevertheless lacking. Because Examiner has not provided any evidence that establishes that the variations are obvious over the invention as defined by the claims, the claims of the instant application may be assumed to be a separate and distinct invention.

Under paragraph 30, in an attempt to address the obviousness of the variations, the Examiner states that “[t]he provision of any such differences would have been obvious for the benefit of providing greater functionality to the user” (Office Action at

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<sup>29</sup> *Id.* at 683.

<sup>30</sup> *Miller v. Eagle Mfg. Co.*, 151 U.S. at 198.

144.) The Examiner provides a single statement of motivation to address any differences without positively identifying the differences.

This statement lacks the proper motivation for establishing obviousness under 35 U.S.C. § 103 for at least the following reasons. First, “for the benefit of providing greater functionality to the user” does not answer the question of whether the differences would have been obvious to one of ordinary skill in the art. This attempt at providing motivation fails to take into consideration the level of ordinary skill at the time of the invention. To determine whether greater functionality provides adequate motivation, the Examiner should take into consideration (among other things) the level of ordinary skill in the art, as expressly provided in M.P.E.P § 804 (II)B(1) and *Graham v. John Deere Co.*<sup>31</sup> A proper motivation statement takes into consideration what would have been obvious to someone with ordinary skill in the art at the time of the invention. Without this determination, a modification cannot be deemed obvious for “greater functionality”. Examiner attempts to provide the level of ordinary skill in the art on pages 123-128. However, the Examiner nevertheless fails to provide a teaching as to how the differences would have been obvious. A variation may not be assumed to be obvious merely because greater functionality is alleged to be provided. The Examiner has failed to provide a proper statement of motivation.

Second, Examiner’s statement of motivation is overly broad. The statement of “greater functionality to the user” does not adequately provide a teaching to one of ordinary skill in the art. According to the Examiner’s reasoning, any and all differences between sets of claims, whether novel or not, will be considered obvious due to “greater functionality”. The Examiner’s version of motivation is improper and erroneous.

Third, while a variation provides “greater functionality”, it may also be considered novel and non-obvious. For example, while an improvement on a widget provides

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<sup>31</sup> 383 U.S.1, 148 USPQ 459 (1966).

“greater functionality”, the improvement may just as well be novel and therefore merit patent protection. Non-obvious improvements provide “greater functionality” to the user. Likewise, a mere change in color may also provide greater functionality to the user. However, based on the level of ordinary skill in the art at the time of the invention, a mere color change may be considered to be an obvious variation. Because Examiner’s version of motivation may be construed in two dynamically different ways, the motivation statement of providing “greater functionality to the user”, as applied to “any such differences” is clearly deficient.

## **5. Conclusion**

The Examiner’s basis for the double patenting rejections is inconsistent with the Patent Office Procedures found in the M.P.E.P. The Examiner has fatally misapplied and confused the established law of double patenting. The belief that if two claims in separate applications are supported by the same embodiment in the application’s common specification as being a *prima facie* basis for obviousness-type double patenting rejections is not supported by the rules and procedures as set forth in the M.P.E.P. Furthermore, the Examiner has not cited any case law or any other authority, for that matter, for this erroneous basis.

To establish a proper obviousness-type double patenting rejection, the PTO must show that (1) the inventions claimed (2) are not patentably distinct and (3) are based on a *prima facie* showing of obviousness. According to § 804 of the M.P.E.P, any obviousness-type double patenting rejection should make clear the differences between the inventions defined by the conflicting claims; and the reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim in issue is an obvious variation of the invention defined in a claim in the patent. As discussed above,

the Examiner has not identified the claimed inventions; established variations; or shown that variations would have been obvious to a person of ordinary skill in the art.

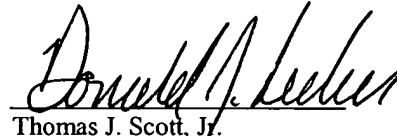
Therefore, the Examiner has failed to properly establish a *prima facie* basis for a double patenting rejection of the obviousness type. Applicants respectfully request withdrawal of the rejection of all pending claims.

### III. CONCLUSION

In accordance with the foregoing it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. Further, all pending claims are patentably distinguishable over the prior art of record, taken in any proper combination. Thus, there being no further outstanding objections or rejections, the application is submitted as being in a condition for allowance, which action is earnestly solicited.

If the Examiner has any remaining informalities to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such informalities.

Respectfully submitted,



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**APPENDIX A**

**SPECIFICATION SUPPORT**

**TO**

**PARENT 1981 APPLICATION**

**AND**

**INSTANT APPLICATION**

| Claim Language                             | Support to parent application filed November 3, 1981. |  | Support to instant specification.     |   |
|--|---|--|---------------------------------------|---|
|  | Reference   | Language   | Reference                             | Language  |
| 3. A method of processing signals to       | Column 18 lines 43-45.                                | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion.                     | Page 419 line 34 to Page 420 line 2.  | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.   |
|  | Column 19 lines 31-34.                                | FIG 6C can also illustrate how programming delivered at different times to one place can be co-ordinated to give a multimedia presentation at one time in one place. | Page 18 lines 24-27.                  | Fig. 7C is a block diagram of signal processing apparatus and methods selecting receivable information and programming and controlling combined medium, multi-channel presentations.  |
|  |   |  | page 450 line 27 to page 451 line 11. | (To accomplish all this has required only that the subscriber of microcomputer, 205, [and other subscribers at other stations] cause the installation and connection of the apparatus shown in the figures of this submission, especially Fig. 7 (and 7C); caused his microcomputer, 205, to be preprogrammed as described above; and preinformed microcomputer, 205, of his wish to view said "Wall Street Week" program by causing the aforementioned select-WSW information to be recorded at said microcomputer, 205.)<br>Then the combined medium combining process described above in "One Combined Medium" and in examples #1, #2, #3, #4, etc. commences. And the Fig. 1C combining is displayed.<br>But the combining of Fig. 1C is just part of a larger process.<br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first. |
| select at least one datum with independent | Column 19 lines 39-41.                                | [Microcomputer, 205,] records those prices that relate to the stocks in its stored   | Page 449 lines 13-20.                 | Each weekday after 4:30 PM, a remote stock-price-data- transmission station   |

| Claim Language  |  | Support to parent application filed November 3, 1981.  |            | Support to instant specification.               |   |
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| receiver specific relevance   |  |  | portfolio. |   | transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer.  |
| at a receiver station and   | Column 18 lines 46-48.                 | ... microprocessor, 205, is programed to hold a portfolio of stocks and to receive news about these particular stocks and about the industries they are in.  |            | Page 420 lines 3-6.                             | The microprocessor, 205, of the station of Fig. 7 and 7C, is preprogrammed to hold records of a portfolio of stocks and to receive and process automatically news items about said stocks and about the industries of said stocks.  |
|   | Column 17 lines 47-53.                 | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. |            | Page 390 lines 30-35.                           | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.  |
|   | Column 19 line 64 to column 20 line 2. | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, for as long as it receives the same instruction signal from processor, 204. The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.  |            | Page 396 lines 8-10.<br><br>Page 26 lines 4-11. | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.<br><br>... "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic. |
| deliver at said receiver station a receiver specific programming presentation, said receiver station having |  |  |            | Page 451 line 3.                                | And the Fig. 1C combining is displayed.   |



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| a computer and an output device, wherein said computer has | Column 19 lines 64-66.                           | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...   | Page 26 lines 1-8.                              | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |  |
| a memory location for storing data and                     | Column 18 lines 65-67.<br>See "data" in Fig. 6C. | ... and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing ...                              | Page 426 lines 10-18.<br>See "data" in Fig. 7C. | Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.) |  |
| said output device outputs one of video, audio, and        | Column 19 lines 27-29.                           | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week." | Page 445 line 24 to page 446 line 1.            | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.                           |  |
|  |  |  | Page 446 lines 17-21.                           | In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...  |  |

| Claim Language  |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.                |   |
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| hardcopy, said method comprising the steps of:  |  | Column 19 line 53-56.                                 | Subsequently in the program, the host says, "Here is what the Dow Jones Industrials did is the past week," and a studio generated graphic is pictured.                            | Page 25 lines 26-33.                             | During this time the program may show the so-called "talking head" of the host as he describes the behavior of the stock market over the course of the week. Then the host says, "Now as we turn to the graphs, here is what the Dow Jones Industrials did in the week just past," and a studio generated graphic is transmitted. Fig. 1B shows the image of said graphic as it appears on the video screen of TV monitor, 202M.                          |
|   |  | Column 18 lines 65-67.                                | ... and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing ...   | Page 426 lines 10-18.                            | Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.) |
| receiving an information transmission from a remote station and passing at least a portion of said information transmission |  | Column 18 lines 48-51.                                | Several separate news services transmit news on different channels carried on the multi-channel cable transmission to converter boxes, 222 and 201, and to signal processor, 200. | Page 420 lines 21-29.                            | Two remote stations--remote news-service-A station and remote news-service-B station--transmit, from geographically separate locations, two different broadcast print transmissions.<br>The intermediate transmission station of Fig. 6 receives and retransmits information the transmissions of said remote stations on digital data channels A and B, respectively, that are inputted to converter boxes, 222 and 201, and to signal processor, 200.   |
| to said computer, said information transmission   |  | Column 18 lines 62-65.                                | In a predetermined fashion, either microcomputer, 205, or signal processor, 200, instructs tuner, 223, to set cable converter box, 222, to the proper channel,...                 | Page 423 lines 11-13.<br><br>Page 424 lines 2-9. | Receiving said message causes said controller, 20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; ...<br><br>Then receiving a particular to-223 instruction from said control processor, 20A, causes  |

| Claim Language                                   |           | Support to parent application filed November 3, 1981. |  | Support to instant specification.                               |   |
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| including data and at least one instruct signal; |           | See "data" in Fig. 6C.<br>Column 18 lines 52-55.      | The news services precede each news transmission with a unique signal that uniquely identifies the company or companies to which the news item refers and/or the industries.                         | See "data" in Fig. 7C.<br>Page 420 line 32 to page 421 line 17. | controller, 20, to transmits particular instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark.<br><br>Each remote station transmits each particular news item within the particular format of a Transmit-News-Item SPAM message, and receiving any given message in a Transmit-News-Item SPAM message ...<br>In due course, said remote news-service-A station transmits a particular AT&T news item in a particular Transmit-AT&T-News-Item message that is in said Transmit-News-Item SPAM message format and that consists of ... the "program unit identification code" information of said AT&T news item and subject matter information of said binary information of "T", appropriate padding bits, an information segment that contains said AT&T news item, and an end of file signal. |
|  | detecting | Column 18 lines 58-62.                                | Signal processor, 200, scans sequentially all channels. When it identifies a signal of interest, it relays that information and the channel identifier, in this illustration, to microcomputer, 205. | Page 422 line 23 to page 423 line 10.                           | At the station of Fig. 7 and 7C, signal processor, 200, scans sequentially all channels at its switch, 1, mixer, 3, and decoder, 30, in the fashion of example #5.<br>In due course, one instance of said Select-AT&T-News-Item message is detected at said decoder, 30, and inputted to the controller, 39, of said decoder, 30.<br>Receiving said Select-AT&T-News-Item message causes said controller, 39, to transmit said message to the controller, 20, of said signal processor, 200. ... Determining a match causes said controller, 39, to transmit  |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.   |  |
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| an instruct-to-select signal in said information transmission; | Column 6 lines 48-50.                                 | This base band signal is then transmitted through separate paths to three separate detector devices.<br><br>The news services precede each news transmission with a unique signal that uniquely identifies the company or companies to which the news item refers and/or the industries. | Page 267 lines 20-28 from example #5.   | said message, with channel mark information that identifies the particular channel in which said message was embedded, to said controller, 20, via control information transmission means and to continue functioning in the fashion of example #5.<br><br>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)  |
|  | Column 18 lines 52-55.                                |  | Page 34 line 35 to page 35 line 1.<br><br>Page 420 line 32 to page 421 line 17. | This base band signal is then transferred through separate paths to three separate detector devices.<br><br>Each remote station transmits each particular news item within the particular format of a Transmit-News-Item SPAM message, and receiving any given message in a Transmit-News-Item SPAM message ...<br>In due course, said remote news-service-A station transmits a particular AT&T news item in a particular Transmit-AT&T-News-Item message that is in said Transmit- News-Item SPAM message format and that consists of ... the "program unit identification code" information of said AT&T news item and subject matter information of said binary information of "T", appropriate padding bits, an information segment that contains said AT&T news item, and an end of file signal. |
| The signal processor, 200, of said station is                  |   |  |   |  |

| Claim Language         |  | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |  |  |
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| Column 18 lines 56-58. | ... signal processor, 200, to hold examples of the sought for unique signals in its buffer/ comparator, 8, and compare them with all incoming signals. | Column 18 line 42.                                    | Receiving Selected Information and/or Programming. | Page 420 lines 6-20.<br><br>Page 422 lines 33 to<br>Page 423 line 4.<br><br>See generally page 419<br>line 33 to page 447 line<br>23. (Page 419 line 33<br>quoted herein.) | preprogrammed ... with particular news-items-of-interest information that includes identification information of the particular stocks in said portfolio ...<br>One company whose stock is preprogrammed at said microprocessor, 205, is the American Telephone and Telegraph Company whose stock is identified by particular binary information of "T". And among the news-items-of-interest information at said RAM is an instance of said binary information of "T".<br><br>...said controller, 39, to load the binary information of "T" ... of said message at particular working register memory and determine that the information at said memory matches the aforementioned binary information of "T" that is among the news-items-of-interest information....<br><br><b>Automating U. R. Stations ... Receiving Selected Programming</b> | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. (Said remote station transmits said closing stock price data and causes specific subscriber stations to select and process their specific information of interest in the fashion in which |  |
| Column 19 lines 35-37. | Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day.    | processing said data at said computer and             |  |  |   |  |  |

| Claim Language  |  | Support to parent application filed November 3, 1981. |  | Support to instant specification.                                 |   |
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| selecting a plurality of subscriber data;                                   |  | Column 19 lines 39-41.                                | [Microcomputer, 205,] records those prices that <b>relate</b> to the stocks in its stored portfolio.   | Page 449 lines 13-20.   | remote news-service-A station transmitted the AT&T news item and caused selected stations to select and process, in their specific fashions, the information of said item.)<br><br>Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. |
| storing said selected plurality of subscriber data at said memory location; |  | Column 19 lines 39-41.                                | [Microcomputer, 205,] <b>records</b> those prices that relate to the stocks in its stored portfolio.   | Page 449 lines 13-20.   | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer.  |
| receiving mass medium programming from a programming source and             |  | Column 19 lines 28-29.                                | ...and tuner, <b>215</b> , to tune appropriately to "Wall Street Week."  | Page 445 line 35 to page 446 line 1.<br><br>Page 446 lines 17-21. | ... and to tune monitor, 202M, in a predetermined fashion.<br><br>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio....  |
| outputting said mass medium programming at said output device;              |  | Column 19 lines 27-29.                                | ...and also microcomputer, <b>205</b> , may instruct switch, <b>216</b> , to turn TV set, <b>202</b> , on and tuner, <b>215</b> , to tune appropriately to "Wall Street Week." | Page 445 line 24 to page 446 line 1.                              | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs   |

| Claim Language |           | Support to parent application filed November 3, 1981. |  | Support to instant specification. |   |
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|                |           |   |  |                                   | a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.<br><br>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...<br><br>During this time the program may show the so-called "talking head" of the host as he describes the behavior of the stock market over the course of the week. Then the host says, "Now as we turn to the graphs, here is what the Dow Jones Industrials did in the week just past," and a studio generated graphic is transmitted. Fig. 1B shows the image of said graphic as it appears on the video screen of TV monitor, 202M. |
|                |           |   |  |                                   | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |
|                |           |   |  |                                   | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.   |
|                |           |   |  |                                   | TV monitor, 202M, then displays ... the   |

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| Claim Language  | Support to parent application filed November 3, 1981.                |  | Support to instant specification.               |   |
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|   | Reference  | Language   | Reference                                       | Language  |
| storing; and  | column 20 line 1.<br><br>Column 19 lines 39-41.                      | generated graphic of his own stocks' performance ...<br><br>[Microcomputer, 205,] records those prices that relate to the stocks in its stored portfolio.  | Page 449 lines 13-20.                           | microcomputer generated graphic of the subscriber's own portfolio performance ...<br><br>Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. |
| outputting at least one of a simultaneous presentation and  | Column 19 lines 67 to column 20 line 2.                              | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.  | Page 451 line 3.<br><br>Page 26 lines 8-11.     | And the Fig. 1C combining is displayed.<br><br>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.  |
| a sequential presentation of said mass medium programming and said selected subscriber information. | Column 19 lines 59-60.<br><br>Column 19 line 67 to column 20 line 1. | Then the host says, "And here is what your portfolio did."<br><br>The viewer then sees a microcomputer generated graphic of his own stocks' performance ...  | Page 25 lines 33-34.<br><br>Page 26 lines 8-11. | Then the host says, "And here is what your portfolio did."<br><br>TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...   |
| 4. The method of claim 3, further comprising the step of: programming said receiver station to:     | Column 8 lines 20-27.  | The signal processor apparatus also has a controller device which includes programmable random access memory controller 20, read only memory 21 that may contain a unique digital code capable of identifying the signal processing apparatus uniquely, an automatic dialing | Page 33 lines 7-20.                             | Signal processor, 26, has a controller device which includes programmable RAM controller, 20; ROM, 21, that may contain unique digital code information capable of identifying signal processor, 26, and the subscriber station of said processor, 26, uniquely; an automatic dialing device 24, and  |



| Claim Language  |   | Support to parent application filed November 3, 1981.   |                                       | Support to instant specification. |   |
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|   |   | Reference   | Language                              | Reference                         | Language  |
| (1) process one of a broadcast transmission and a cablecast transmission; | device 24, and a telephone unit, 22. The controller, 20, governs the operation of all operating elements of the apparatus.                              |   |                                       |                                   | a telephone unit, 22. ... Controller, 20, has capacity for controlling the operation of all elements of the signal processor ...  |
|   | Column 9 lines 47-57.   | The controller, 20, is programed to sequence the local oscillator, 6, to select each desired frequency for a specific time interval in accordance with a predetermined pattern. This pattern may be selected in accordance with standard broadcast and cablecast practices known to exist on that transmission line or frequency. | Page 248 line 17 to page 249 line 5.  |                                   | Signal processor, 200, is preprogrammed with information that identifies each cable and over-the-air (hereinafter, "wireless") transmission or frequency in the locality of the subscriber station of Fig. 3 as well as the standard broadcast and cablecast practices that apply on said transmissions and frequencies ... In a predetermined fashion, controller, 20, controls oscillator, 6, to sequence local oscillator, 6, in the pattern: cable channel 2, cable channel 4, cable channel 7, cable channel 13, wireless channel 5, wireless channel 9, wireless channel 13, then to repeat said pattern.   |
|   |   |   | Page 257 line 24 to page 258 line 19. |                                   | Said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 9. Automatically oscillator, 6, causes mixer, 3, to select the frequency of channel 9 and input said frequency of interest, at a fixed frequency, to decoder, 30 ...<br>Controller, 20, has capacity for keeping track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13. |
|   | The local oscillator, being thus sequenced, will allow each signal decoder, 30 and 40, to receive a particular frequency at a particular time interval. | Page 257 line 24 to page 258 line 19.   |                                       |                                   | Said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection   |

| Claim Language | Support to parent application filed November 3, 1981.<br>Reference  | Language | Support to instant specification.<br>Reference   | Language   |
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|                |   |          | <p>Page 265 line 27 to<br/>Page 266 line 21.</p> | <p>pattern: wireless channel 9. Automatically oscillator, 6, causes mixer, 3, to select the frequency of channel 9 and input said frequency of interest, at a fixed frequency, to decoder, 30 ...</p> <p>Controller, 20, has capacity for keeping track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13.</p> <p>Said radio-detection-complete information causes ... controller, 20, to cause oscillator, 6, to cause the selection of the next frequency in the predetermined radio frequency selection pattern: 99.0 MHz. Automatically oscillator, 6, causes mixer, 2, to select said frequency and input it, at a fixed frequency, to decoder, 40 ...</p> <p>After determining, in a predetermined fashion, that a particular predetermined period of time has elapsed from the input of said 99.0 MHz frequency to decoder, 40, controller, 20, ... causes oscillator, 6, to cause the selection of the next frequency in the predetermined radio frequency selection pattern: 100.0 MHz.</p> |
|                | <p>This will define the timing of the composite outputs of the digital detectors, 34, 37, and 38 in FIG. 2A, and 43 in FIG. 2B.</p> |          | <p>Page 250 lines 13-17.</p>                     | <p>Example #5 begins with the embedding and transmitting, at the remote station that originates the "Wall Street Week" broadcast, of the first message of the "Wall Street Week" program which is the message of the first combining synch command.</p>  |
|                |   |          | <p>Page 251 lines 8-11.</p>                      | <p>Receiving said embedded information causes the binary SPAM information of said first command, with error correcting information, to be detected at detector, 34; ...</p>  |

| Claim Language  |                       | Support to parent application filed November 3, 1981.  |  | Support to instant specification.  |  |
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|   | Reference             | Language   | Reference  | Language   |  |
|   | Column 6 lines 23-30. | A signal processor apparatus for simultaneous use with a cablecast input that conveys both television and radio programming and a broadcast television input is shown in Figure 1. As shown, the input signals are the entire range of frequencies or channels transmitted on the cable and the entire range of broadcast television transmissions available to a local television antenna of conventional design. | Page 263 lines 19-24.<br><br>Page 37 lines 26-28.<br><br>Page 29 lines 4-15. | ... said information to radio decoder, 42, which decodes the the embedded signal information of said command and transmits said signal information to digital detector, 43, which detects the binary information with error correcting bit information of said command and transfers said binary and bit information to controller, 44.<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46.<br><br>Fig. 2 shows one embodiment of a signal processor. Said processor, 26, is configured for simultaneous use with a cablecast input that conveys both television and radio programming and a broadcast television input. ... The inputted information is the entire range of frequencies or channels transmitted on the cable and the entire range of broadcast television transmissions available to a local television antenna of conventional design. |  |
| (2) select a first datum communicated in said one of said broadcast transmission and said cablecast transmission; and | Column 9 lines 57-63. | The [controller, 20,] will control buffer/comparator, 8, to discard received duplicate and partial signals, to mark signals with correct channel identifiers, to transfer signals to decrypter, 10, and processor or monitor, 12, as required, and to perform such other functions as buffer/comparator, 8, performs.  | Page 146 line 31 to page 147 line 3.<br><br>Page 258 lines 17-25.            | Said failures to match cause the controllers, 20, of said stations automatically ... to cause said buffer/comparators, 8, to discard all received information of said second message; and to cause ... said buffer/comparators, 8, to commence processing in the conventional fashion.)<br><br>... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13. Automatically, oscillator, 6, causes mixer, 3, to select the frequency of channel 13 and input said frequency to   |  |

| Claim Language                            | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference  | Support to instant specification.<br>Language  |
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|   |  |  | <p>Page 260 lines 5-13.</p>  | <p>decoder, 30. Controller, 20, then transmits a particular preprogrammed wireless-13 instruction to said control processor, 39J, that informs said processor, 39J, wireless channel 13 is inputted to decoder, 30.</p> <p>... commence transferring information from control processor, 39J, to buffer/comparator, 8, then to transmit a message that consists of binary information of a "00" header then the execution segment information of the pseudo command then a meter-monitor segment containing said monitor information in RAM (including the associated channel mark and the format information of said information) then any padding bits required to end said message. (Hereinafter, said message is called the "3rd-old-program-message (#5)".)</p> <p>Then said decrypt-with-J instructions cause controller, 20, to activate the output capacity of buffer/comparator, 8, that outputs to decryptor, 10;</p> <p>Next said decrypt-a-00-header-message instructions cause controller, 20, to cause buffer/comparator, 8, to transfer to decryptor, 10, a quantity of signal words of said binary information of the second message ...</p> <p>Decryptor, 10, commences receiving said information, decrypting it using said key J information and transferring it to controller, 12, ...</p> |
| (3) communicate said selected first datum | Column 9 lines 65-68.  | [Controller, 20] instructs processor or monitor, 12, how to identify what signals to pass externally and where to pass them and what signals to transfer to buffer/comparator, 14. | <p>Page 147 lines 29-31.</p> <p>Page 149 lines 17-20.</p> <p>Page 149 lines 27-29.</p> | <p>Then said decrypt-a-00-header-message instructions cause controller, 20, to transmit to controller, 12, a particular <i>transfer-decrypted-message instruction</i> and particular decryption mark information of key</p>  |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification.   |   |
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|                | Reference   | Language | Reference   | Language  |
|                |   |          |   | <p>J that identifies J as the decryption key.<br/>Receiving said instruction and information causes controller, 12, to execute particular preprogrammed <i>transfer- and-meter instructions</i> then record said mark of key J at particular decryption-mark-@12 register memory.</p> <p>Under control of said <i>transfer-and-meter instructions</i>, controller, 12, commences receiving decrypted information of the second message from decryptor, 10.</p> <p>Automatically controller, 12, processes said information of the second message of example #2 as a SPAM command. Receiving the header and execution segment causes controller, 12, to determine that said message is addressed to URS microcomputers, 205, and to transfer said message accordingly.</p> <p>Receiving said complete-transfer-phase instruction causes controller, 12, to cease transferring information, under control of said <i>transfer-and-meter instructions</i>, to deactivate all output ports, and to commence executing the meter instructions of said transfer-and-meter instructions. Said meter instructions cause controller, 12, to ... transfer to buffer/comparator, 14, particular header identification information that identifies controller, 12, as the source of said transfer the information recorded at said SPAM-meter memory then the information recorded at said decryption-mark- @12 register memory, which information is the decryption mark of key J. (Hereinafter, said meter information generated by the second combining synch command in example #2 is called the "2nd meter information (#2).")</p> <p>...cause said controller, 39, to load the binary</p> |
|                |   |          | <p>Page 150 lines 7-9.</p> <p>Page 150 lines 16-21.</p> <p>Page 152 line 18 to page 153 line 1.</p> |   |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.        |   |
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|   | Reference   | Language  | Reference                                | Language  |
| to said computer.   | Column 18 lines 59-62.                                | When [signal processor, 200] identifies a signal of interest, it relays that information and the channel identifier, in this illustration, to microcomputer, 205. | Page 422 line 33 to<br>Page 423 line 10. | information of "T" ... of said message at particular working register memory and determine that the information at said memory matches the aforementioned binary information of "T" that is among the news-items-of-interest information ... Determining a match causes said controller, 39, to transmit said message, with channel mark information that identifies the particular channel in which said message was embedded, to said controller, 20, via control information transducing means and to continue functioning in the fashion of example #5. |
| 5. The method of claim 3, wherein said step of outputting said at least one of said simultaneous presentation and said sequential presentation of said mass medium programming and said selected subscriber information is performed in response to a command, said method further comprising at least one of the steps of: | Column 19 lines 64-66.                                | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,....   | Page 26 lines 1-8.                       | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |
|   | Column 19 lines 48-53.                                | These signals instruct microcomputer, 205, to   | Page 23 line 35 to page 24 line 16.      | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as  |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference   | Support to instant specification.<br>Language  |
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|  |  | <p>generate several graphic video overlays, ...</p> <p>and to transmit these overlays to TV set, <b>202</b>,</p> <p><b>upon command.</b></p>  | <p>Page 451 lines 7-11.</p> <p>Page 26 lines 4-8.</p> <p>Page 44 lines 14-17.</p> <p>Page 26 lines 20-28.</p> | <p>the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions ... (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")</p> <p>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions.</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command ...</p> |
| inputting a subscriber command at said receiver station; and | <i>In General</i><br>Column 17 lines 39- 44.                       | Signal processor apparatus have the ability to identify instruction and information signals in one or more inputted television and radio programming transmissions, identify and discriminate | <i>In General</i><br>Page 15 lines 16-23.   | The frequencies may convey television, radio, or other programming transmissions....The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors   |

| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.   |  |
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|   | Reference   | Language   | Reference   | Language   |
|   |   | among one or more pieces of external equipment to which such signals are <b>addressed</b> , and transfer such signals to such equipment as <b>directed</b> . | Page 34 lines 24-26.<br><br>Page 44 lines 14-15.<br><br>Page 95 lines 18-21.        | that identify signals encoded in programming transmissions and convert the encoded signals to digital information; ...<br><br>... identifies the particular apparatus to which said signals are <b>addressed</b> , and outputs said signals to said apparatus ...<br><br>A command is an instance of signal information that is <b>addressed</b> to particular subscriber station apparatus and that ...<br><br>Receiving the header and execution segment of said first message causes controller, 39, to determine that said message is <b>addressed</b> to URS microcomputers, 205, and to transfer said message to microcomputer, 205. |
|   | <i>Specifically</i><br>Column 19 lines 63-64.         | This signal is identified by decoder, 203, and transferred via <b>processor</b> , 204, to microcomputer, 205.  | <i>Specifically</i><br>Page 26 lines 1-2.<br><br>Page 37 line 26 to page 38 line 8. | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.   |
| detecting at said receiver station said command communicated from the remote station. | Column 19 lines 63-64.                                | This signal is identified by <b>decoder</b> , 203, and transferred via processor, 204, to microcomputer, 205.  | Page 26 lines 1-2.<br><br>Page 37 line 26 to page 38 line 8.                        | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a  |



| Claim Language  |                        | Support to parent application filed November 3, 1981.  |          | Support to instant specification.    |   |
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|   |                        | Reference  | Language | Reference                            | Language  |
|   | Column 19 lines 24-25. | ... microcomputer, <b>205</b> , may instruct tuner, <b>214</b> , to switch box, <b>201</b> , to channel X...   |          | Page 295 lines 6-8.                  | predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.<br><br>Then, automatically, controller, <b>20</b> , causes a selected tuner, <b>214</b> , to tune to the frequency of cable channel <b>13</b> , thereby causing its associated converter box, <b>201</b> , to convert its...   |
|   | Column 18 lines 48-51. | Several separate news services transmit news on different channels carried on the multi-channel cable transmission to converter boxes, <b>222</b> and <b>201</b> , and to signal processor, <b>200</b> . |          | Page 439 lines 9-15.                 | ... to cause selected apparatus of said station--cable converter box, <b>201</b> , ... to receive the transmission of cable channel <b>13</b> ,...  |
|   |                        |  |          | Page 420 lines 21-29.                | Two remote stations--remote news-service-A station and remote news-service-B station--transmit, from geographically separate locations, two different broadcast print transmissions.<br><br>The intermediate transmission station of Fig. 6 receives and retransmits information the transmissions of said remote stations on digital data channels A and B, respectively, that are inputted to converter boxes, <b>222</b> and <b>201</b> , and to signal processor, <b>200</b> .                      |
| 6. The method of claim 3, wherein said mass medium programming comprises one of television programming, | Column 19 lines 27-29. | ...and also microcomputer, <b>205</b> , may instruct switch, <b>216</b> , to turn TV set, <b>202</b> , on and tuner, <b>215</b> , to tune appropriately to "Wall Street Week."                           |          | Page 445 line 24 to page 446 line 1. | ... instructions causes controller, <b>20</b> , to switch power on to monitor, <b>202M</b> , and commence transferring the television output transmission of microcomputer, <b>205</b> , to said monitor, <b>202M</b> ; ... Automatically, controller, <b>20</b> , inputs a particular instruction to decoder, <b>145</b> , via said communications link, that causes decoder, <b>145</b> , to switch power on to monitor, <b>202M</b> , and to tune monitor, <b>202M</b> , in a predetermined fashion. |
|   |                        |  |          | Page 446 lines 17-21.                | In so doing, controller, <b>20</b> , causes monitor, <b>202M</b> , to receive the decrypted video and   |

| Claim Language                       |                        | Support to parent application filed November 3, 1981.  |                                      | Support to instant specification.  |  |
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| radio programming,                   | Column 19 lines 1-4.   | In the same fashion, microcomputer, 205, may also instruct signal processor, 200, to monitor single or multiple television channels and/or radio channels for programming of interest to play or record. | Page 419 line 34 to page 420 line 2. | audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...<br><br>Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.<br><br>The present invention consists of an integrated system of methods and apparatus for communicating programming. The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming as well as combined medium programming.<br><br>Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.) |  |
| print programming, and               | Column 18 lines 65-67. | ... and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing ...  | Page 426 lines 10-18.                |  |  |
| a portion of multimedia programming. | Column 19 lines 31-34. | FIG 6C can also illustrate how programming delivered at different times to one place can be co-ordinated to give a multimedia presentation at one time in one place.                                     | Page 18 lines 24-27.                 | Fig. 7C is a block diagram of signal processing apparatus and methods selecting receivable information and programming and controlling combined medium, multi-channel presentations.<br><br>(To accomplish all this has required only that the subscriber of microcomputer, 205, [and other subscribers at other stations] cause the installation and connection of the  |  |

| Claim Language   | Support to parent application filed November 3, 1981. | Support to instant specification.   |  |
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|  |   |   | <p>apparatus shown in the figures of this submission, especially Fig. 7 (and 7C); caused his microcomputer, 205, to be preprogrammed as described above; and preinformed microcomputer, 205, of his wish to view said "Wall Street Week" program by causing the aforementioned select-WSW information to be recorded at said microcomputer, 205.)</p> <p>Then the combined medium combining process described above in "One Combined Medium" and in examples #1, #2, #3, #4, etc. commences. And the Fig. 1C combining is displayed.</p> <p>But the combining of Fig. 1C is just part of a larger process.</p> <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.</p> |
| <p>7. The method of claim 6, wherein said step of selecting said subscriber information is performed in response to a first instruct signal communicated from said programming source, said method further comprising the step of:</p> | <p>Column 19 lines 60-66.</p>                         | <p>At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ...</p> | <p>Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of</p> <p>Page 25 line 33 to page 26 line 2..</p> <p>Page 37 line 26 to page 38 line 8.</p>   |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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|  |   |   |  | forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.<br><br>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. |
|  | Page 26 lines 4-8.                                    |   |  |  |
| programming said receiver station to process said first instruct signal communicated from said programming source that communicates said mass medium programming.  | Column 19 lines 42-44.                                | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.  | Page 21 lines 20-24.   | Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   |
| 8. The method of claim 7, wherein at least one of said step of: processing, selecting subscriber information, and outputting is performed in accordance with a second instruct signal communicated from said programming | Column 19 lines 42-53.                                | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, | Page 450 lines 31-32.<br><br>Page 21 lines 20-24.<br><br>Page 451 lines 6-7. | ... caused his microcomputer, 205, to be preprogrammed as described above; ...<br><br>Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...  |

| Claim Language                                      | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |  |
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|   | Reference   | Language   | Reference                          | Language   |
| source, said method further comprising the step of: |   | several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. | Page 23 line 35 to page 24 line 4. | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.   |
|   |   | These signals instruct microcomputer, 205,   | Page 37 line 26 to page 38 line 8. | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.  |
|   |   |  | Page 24 lines 5-16.                | Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set." |
|   |   | to generate several graphic video overlays,  | Page 451 lines 7-11.               | ... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.   |
|   |   | which microcomputer, 205, has the means  | Page 19 line 29 to page            | Microcomputer, 205, is a conventional  |

| Claim Language | Support to parent application filed November 3, 1981. |  | Support to instant specification. |   |
|----------------|---|--|-----------------------------------|---|
|                | Reference   | Language   | Reference                         | Language  |
|                |   | to generate and transmit and TV set, 202, has the means to receive and display, and to | 20 line 20.                       | microcomputer system ... for generating computer graphic information; for receiving a composite video transmission; for combining said graphic information onto the video information of said transmission by graphic overlay techniques, well known in the art; and for outputting the resulting combined information to a TV monitor, 202M, in a composite video transmission. ... TV monitor, 202M, has capacity for receiving composite video and audio transmissions and for presenting a conventional television video image and audio sound. |
|                |   | transmit these overlays to TV set, 202,  | Page 26 lines 4-8.                | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.  |
|                |   | upon command.  | Page 44 lines 14-17.              | A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a ...   |
|                |   |  | Page 26 lines 20-28.              | (Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)   |
|                | Column 19 lines 17-23.                                | ... processor or monitor, 12, which reacts,  | Page 435 lines 16-18.             | In due course, while scanning sequentially  |

| Claim Language | Support to parent application filed November 3, 1981. | Language   | Reference   | Support to instant specification.   | Language |
|----------------|---|--|---|---|----------|
|                |   | <p>in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X.</p> | <p>Page 267 lines 20-28 from example #5.</p> <p>Page 436 line 9 to page 437 line 3.</p> | <p>all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...</p> <p>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>Receiving said Select-WSW-Program- Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW information and said ... enable-WSW-on-CC13...</p> <p>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to</p> |          |

| Claim Language   | Support to parent application filed November 3, 1981.       |   | Support to instant specification.  |  |
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|  | Reference   | Language  | Reference  | Language   |
|  | Column 19 lines 23-25.                                      | ... microcomputer, <b>205</b> , may instruct tuner, <b>214</b> , to switch box, <b>201</b> , to channel X ...   | <p>Page 439 lines 14-15.</p> <p>Page 437 lines 1-6.</p> <p>Page 439 lines 9-15.</p> <p>Page 295 lines 6-8.</p> <p>Page 439 lines 9-15.</p> | <p>the controller, <b>20</b>.</p> <p>... to receive the transmission of cable channel 13; ...</p> <p>Determining a match causes microcomputer, <b>205</b>, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, <b>20</b>.</p> <p>Receiving said please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, <b>20</b>, in a predetermined fashion, to prepare particular apparatus ...</p> <p>... to cause selected apparatus of said station--cable converter box, <b>201</b>, ... to receive the transmission of cable channel 13; ...</p> <p>Then, automatically, controller, <b>20</b>, causes a selected tuner, <b>214</b>, to tune to the frequency of cable channel 13, thereby causing its associated converter box, <b>201</b>, to convert its ...</p> <p>...to cause selected apparatus of said station--cable converter box, <b>201</b>, ... to receive the transmission of cable channel 13; ...</p> |
| programming said receiver station to one of locate and | <p>Column 18 lines 45-47.</p> <p>Column 18 lines 58-59.</p> | <p>In this example, microprocessor, <b>205</b>, is programmed to hold a portfolio of stocks ...</p> <p>Signal processor, <b>200</b>, scans sequentially all channels.</p> | <p>Page 420 lines 3-4.</p> <p>Page 422 lines 23-25.</p>  | <p>The microprocessor, <b>205</b>, of the station of Fig. 7 and 7C, is preprogrammed to hold records of a portfolio of stocks ...</p> <p>At the station of Fig. 7 and 7C, signal processor, <b>200</b>, scans sequentially all channels at its switch, <b>1</b>, mixer, <b>3</b>, and decoder, <b>30</b>, in the fashion of example #5.</p>  |



| Claim Language               |                        | Support to parent application filed November 3, 1981.   |          | Support to instant specification.                                  |   |
|------------------------------|------------------------|---|----------|--|---|
|                              |                        | Reference   | Language | Reference  | Language  |
| identify                     | Column 18 lines 59-62. | When [signal processor, 200] identifies a signal of interest, it relays that information and the channel identifier, in this illustration, to microcomputer, 205.   |          | Page 422 line 33 to Page 423 line 10.                              | ...cause said controller, 39, to load the binary information of "T" ... of said message at particular working register memory and determine that the information at said memory matches the aforementioned binary information of "T" that is among the news-items-of-interest information ... Determining a match causes said controller, 39, to transmit said message, with channel mark information that identifies the particular channel in which said message was embedded, to said controller, 20, via control information transmission means and to continue functioning in the fashion of example #5.   |
| said second instruct signal. | Column 19 lines 17-23. | ... processor or monitor, 12, which reacts, in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X. |          | Page 435 lines 16-18.<br><br>Page 267 lines 20-28 from example #5. | In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...<br><br>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)<br><br>Receiving said Select-WSW-Program-Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW information and said ... enable-WSW-on- |

| Claim Language   | Support to parent application filed November 3, 1981.  | Support to instant specification.  |
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| Reference  | Language   | Reference  |
|  |  | CC13...<br>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.<br>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW -on-CC13-at-particular- 8:30 information to the controller, 20.<br><br>... to receive the transmission of cable channel 13; ...<br><br>... instruction signals embedded in the "Wall Street Week" programming transmission. |
|  | Page 439 lines 14-15.  |  |
|  | Page 21 lines 23-24.   |  |
|  | ... instruction signals embedded in the "Wall Street Week" programming transmission.   |  |
| Column 19 lines 43-44.   |  |  |
|  |  |  |
| 9. The method of claim 3, wherein said step of storing said selected plurality of subscriber data location occurs before | Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day. It may receive these directly or it may automatically query a data service for them in a predetermined fashion. It records those prices that relate to the stocks in its stored portfolio. | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer.   |
|  | Column 19 lines 35-41.   | Page 449 lines 13-35.  |

| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Language   | Support to instant specification.<br>Reference | Language   |
|---|--|--|--|--|
| the commencement of said step of receiving said mass medium programming from said programming source.           | Column 19 lines 45-46.   | When the "Wall Street Week" transmission begins at <b>8:30 PM</b> on a Friday evening, ... | Page 451 lines 6-7.                            | (Said remote station transmits said closing stock price data and causes specific subscriber stations to select and process their specific information of interest in the fashion in which remote news-service-A station transmitted the AT&T news item and caused selected stations to select and process, in their specific fashions, the information of said item.)<br>Alternatively, microcomputer, 205, is caused in a predetermined fashion (for example, by a SPAM message a given transmission monitored by signal processor, 200, in any of the above described fashions) automatically to telephone a remote data service computer, by means of network, 262, in a fashion well known in the art, and to cause said remote computer to select and transmit the particular closing price datum or data of the stock or stocks of the portfolio of said microcomputer, 205, thereby causing said microcomputer, 205, to record said datum or data in a predetermined fashion.<br><br>When the "Wall Street Week" transmission begins at <b>8:30 PM</b> on a Friday evening, ... |
| 10. The method of claim 3, further comprising the step of: generating at least one subscriber datum to serve as | Column 19 lines 48-53.   | These signals instruct microcomputer, 205, to  | Page 23 line 35 to page 24 line 16.            | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of  |

| Claim Language                           | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference   | Support to instant specification.<br>Language   |
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|  |  | <p>generate several graphic video overlays, ...</p> <p>and to transmit these overlays to TV set, 202,</p> <p>upon command.</p> | <p>Page 451 lines 7-11.</p> <p>Page 26 lines 4-8.</p> <p>Page 44 lines 14-17.</p> <p>Page 26 lines 20-28.</p> | <p>instructions ... (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")</p> <p>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions.</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synchron command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synchron command ...</p> |
| a source of said subscriber information. | Column 19 lines 64-66.   | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...                                     | Page 26 lines 1-8.  | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.   |   | Support to instant specification.   |          |
|---|------------------------|---|---|---|----------|
|   |                        | Reference   | Language  | Reference   | Language |
|   |                        |   |   |   |          |
| 11. The method of claim 3, wherein said selected plurality of subscriber data include a datum of at least one of price, portfolio holding, economic conditions, monetary value, and financial interest. | Column 19 lines 39-41. | [Microcomputer, 205,] records those prices that relate to the stocks in its stored portfolio.   | Page 449 lines 13-20.   | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer.  |          |
| 12. The method of claim 3, wherein a series of locally generated images that is outputted during the course of said mass medium programming, said method further comprising one of the steps of:        | Column 19 lines 48-53. | These signals instruct microcomputer, 205, to<br><br>generate several graphic video overlays, ...<br><br>and to transmit these overlays to TV set, 202, | Page 23 line 35 to page 24 line 16.<br><br>Page 451 lines 7-11.<br><br>Page 26 lines 4-8. | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions ... (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")<br><br>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.<br><br>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV |          |

| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference  | Support to instant specification.<br>Language  |
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|                |  | <p><b>upon command.</b></p> <p>The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic. When the two studio generated graphics are no longer displayed, the studio stops sending the instruction signal, and the microcomputer, 205, ceases transmitting its own graphic to TV set, 202, and prepares to send the next locally generated graphic overlay upon instruction from the originating studio.</p> | <p>Page 44 lines 14-17.</p> <p>Page 26 lines 20-28.</p> <p>Page 26 lines 8-11.</p> <p>Page 451 line 3.</p> <p>Page 26 line 33 to page 27 line 9.</p> | <p>monitor, 202M.</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions.</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command ...</p> <p>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.</p> <p>And the Fig. 1C combining is displayed.</p> <p>As the program proceeds, in the same fashion a further instruction signal is generated at said studio; transmitted; detected; inputted from decoder, 203, to microcomputer, 205; and executed as "GRAPHICS OFF." Then said studio ceases transmitting the graphic image, and transmits another image such as the host's talking head. Simultaneously, the GRAPHICS OFF command causes microcomputer, 205, to cease overlaying the graphic information onto the received composite video and to commence transmitting the received composite video transmission unmodified. Thereafter the "Wall Street Week" program proceeds, and microcomputer, 205, continues to operate under control of received instructions.</p> |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.       |   |
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|  | Reference   | Language  | Reference                               | Language  |
|  |   |   | Page 451 line 22 to page 452 line 5.    | <p>Furthermore, it is undesirable to separate computer operations merely because they result in the generation of separate overlays because such separation may result in unnecessary duplication of calculations. For example, the Fig. 1C display of user specific overall stock portfolio performance could be followed by second and third displays that analyze portions of the subscriber's portfolio-- eg., the portion invested in New York Stock Exchange listed stocks in comparison to the so-called "NYSE" index and the portion invested in so-called "over-the-counter" stocks in comparison to the so-called "NASDAQ" index. In order to calculate the value of the overall portfolio, it is necessary to calculate the value of these portions. To require that the values of the portions be recalculated for subsequent overlays would be inefficient.</p> <p>In computer-based combined medium communications, the amount of information that a given system can convey is dependent on the efficiency of the employment of program instruction sets and combining synch commands.</p> |
| outputting said selected subscriber information in one of said series of images; and     | Column 19 lines 67 to column 20 line 2.               | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.   | Page 451 line 3.<br>Page 26 lines 8-11. | <p>And the Fig. 1C combining is displayed.</p> <p>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.</p>   |
| outputting said selected subscriber information in response to a second instruct signal. | Column 19 line 64 to column 20 line 1.                | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, for as long as it receives the same instruction signal from processor, 204. The viewer then sees a microcomputer generated graphic of his own stocks' performance ... | Page 26 lines 4-10.                     | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. TV monitor, 202M, then displays the image shown in Fig. 1C which is  |

| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |  |
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|   | Reference   | Language   | Reference  | Language   |
|   |   |  |  | the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the ...  |
| 13. A method of controlling a plurality of receiver stations, each of said plurality of receiver stations | Column 19 lines 60-63.                                | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission.   | Page 59 lines 29-33.   | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.                                       |
|   |   |  | Page 25 line 34 to page 26 line 1.   | At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.   |
|   |   |  | Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11. | The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ...  |
|   | Column 17 lines 47-53.                                | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. | Page 390 lines 30-35.  | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons. |
|   |   |  | Page 396 lines 8-10.   | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.   |



| Claim Language  |                        | Support to parent application filed November 3, 1981.   |   | Support to instant specification.  |          |
|---|------------------------|---|---|--|----------|
|   |                        | Reference   | Language  | Reference  | Language |
| including one of a broadcast signal converter and a cablecast signal converter,             | Column 19 lines 28-29. | ...and tuner, 215, to tune appropriately to "Wall Street Week."                                       | Page 445 line 35 to page 446 line 1.<br>Page 446 lines 17-21. | ... and to tune monitor, 202M, in a predetermined fashion.<br>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio....   |          |
| a signal detector,  | Column 19 lines 63-64. | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. | Page 26 lines 1-2.<br>Page 37 line 26 to page 38 line 8.      | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |          |
| a processor,  | Column 19 lines 63-64. | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. | Page 26 lines 1-2.<br>Page 37 line 26 to page 38 line 8.      | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |          |
| wherein each of said plurality of receiver stations is adapted to detect the presence of at | Column 19 lines 63-64. | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. | Page 26 lines 1-2.<br>Page 37 line 26 to page                 | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br>In each decoder, the controller, 39, 44, or 47,   |          |

| Claim Language  |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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|   |  | Reference   |   | Reference  |  |
|   |  | Language  |   | Language   |  |
| least one control signal and programmed   |  |   |   | 38 line 8.   | receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.  |
| to process downloadable code, each of said plurality of receiver stations selecting at least one stored subscriber datum with independent receiver specific relevance, said method comprising the steps of: |  | Column 19 lines 42-44.                                | Microcomputer, 205, is preprogramed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission. | Page 21 lines 20-24.   | Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   |
| (1) receiving at a transmitter station  |  | Column 19 lines 60-62.                                | At this point, an instruction signal is generated in the television studio originating the programming ...  | Page 59 lines 29-33.<br><br>Page 25 lines 34-35.<br><br>Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11. | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The Information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.<br><br>At this point, an instruction signal is generated at said program originating studio, ...<br><br>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor segment of five fields and addresses URS microcomputers, 205. |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  | Support to instant specification.  |
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|   |                        | Reference  | Language   |
| said downloadable code which is effective at at least one of said plurality of receiver stations to | Column 19 lines 46-53. | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, ... <b>upon command.</b> | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.") |
|   |                        |  | A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a  |
|   |                        |  | (Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)  |

| Claim Language  |  | Support to parent application filed November 3, 1981.                              |  | Support to instant specification.                                |   |
|---|--|--|--|--|---|
|   |  | Reference  | Language   | Reference  | Language  |
| select said at least one subscriber datum for   |  | Column 19 lines 64-66.   | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...   | Page 26 lines 1-8.   | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. |
| at least one of simultaneous presentation and a sequential presentation of said at least one subscriber datum with mass medium programming, |  | Column 18 lines 43-45.<br><br>Column 19 lines 59-60.                               | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion.<br><br>Then the host says, "And here is what your portfolio did."     | Page 419 line 34 to Page 420 line 2.<br><br>Page 25 lines 33-34. | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.<br><br>Then the host says, "And here is what your portfolio did."   |
| wherein said downloadable code has a target processor to process data at each of said plurality of receiver stations;                       |  | Column 19 line 67 to column 20 line 1.<br><br>Column 7 lines 59-60.<br>See Fig. 1. | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...<br><br>If [a signal or signals] are to be processed further, processor or monitor, 12, passes them to buffer/comparator, 14. | Page 26 lines 8-11.<br><br>Page 31 lines 18-22.<br>See Fig. 1.   | TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...<br><br>If [a signal or signals] contain meter and/or monitor information and are to be processed further, controller, 12, selects, assembles, and transfers the appropriate information to buffer/comparator, 14.   |
| (2) transferring said downloadable code from said transmitter station to a transmitter;   |  | Column 19 lines 60-63.   | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission.   | Page 59 lines 29-33.   | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The   |

| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference   | Support to instant specification.<br>Language   |
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|                | <p>Column 19 lines 45-49.</p>                                      | <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205 ...</p> | <p>Page 25 line 34 to page 26 line 1.</p> <p>Page 90 lines 4-7.<br/>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11.</p> <p>Page 451 lines 6-7.</p> <p>Page 23 line 35 to page 24 line 4.</p> <p>Page 37 line 26 to page 38 line 8.</p> <p>Page 24 lines 5-6.</p> | <p>information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.</p> <p>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.</p> <p>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ...</p> <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Microcomputer, 205, evaluates the initial</p> |

| Claim Language  |  | Support to parent application filed November 3, 1981.   |          | Support to instant specification.  |   |
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|   |  | Reference   | Language | Reference  | Language  |
|   |  |   |          | Page 451 lines 7-9.  | signal word or words which instruct it to ...<br>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to ...  |
| (3) receiving said at least one control signal at said transmitter station,       | Column 19 lines 60-62.                 | At this point, an instruction signal is generated in the television studio originating the programming ...  |          | Page 59 lines 29-33.   | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The Information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.  |
|   |  |   |          | Page 25 lines 34-35.   | At this point, an instruction signal is generated at said program originating studio, ...   |
|   |  |   |          | Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11. | The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor segment of five fields and addresses URS microcomputers, 205.   |
| said at least one control signal operating to execute said downloadable code; and | Column 19 line 64 to column 20 line 1. | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, for as long as it receives the same instruction signal from processor, 204. The viewer then sees a microcomputer generated graphic of his own stocks' performance ... |          | Page 26 lines 1-2.   | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...  |
|   |  |   |          | Page 37 lines 26 to page 38 line 8.  | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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|   | Reference   | Language  | Reference  | Language   |
|   |   |   |  | <p>required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance</p> <p>And the Fig. 1C combining is displayed.</p>  |
| (4) transferring said at least one control signal from said transmitter station to said transmitter and | Column 19 lines 60-65.                                | <p>At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, ...</p> | <p>Page 26 lines 4-11.</p> <p>Page 451 line 3.</p> <p>Page 25 line 33 to page 26 line 2.</p> <p>Page 37 line 26 to page 38 line 8.</p> | <p>required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance</p> <p>And the Fig. 1C combining is displayed.</p> <p>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber</p> |

| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference   | Support to instant specification.<br>Language   |
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| transmitting an information transmission including said downloadable code and said at least one control signal. | Column 19 lines 46-53.   | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, ... <b>upon command.</b> | <p>Page 26 line 4.</p> <p>Page 23 line 35 to page 24 line 16.</p> | <p>station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, ...</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is</p> |
|   |  |  | <p>Page 44 lines 14-17.</p> <p>Page 26 lines 20-28.</p>           |   |



| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference  | Support to instant specification.<br>Language   |
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|                | Column 19 lines 60-66.   | <p>At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ...</p> | <p>Page 25 line 33 to page 26 line 2..</p> <p>Page 37 line 26 to page 38 line 8.</p> <p>Page 26 lines 4-8.</p> | <p>called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)</p> <p>Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV</p> |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  | Support to instant specification.  |   |
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|   |                        | Reference  | Language   | Reference   |
|   |                        |  |  | monitor, 202M.  |
| 14. The method of claim 13, wherein at least one of said downloadable code and a portion of identification data in respect of said downloadable code is embedded in a television signal.                          | Column 19 lines 60-63. | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. | Page 59 lines 29-33.<br><br>Page 25 line 34 to page 26 line 1.<br><br>Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11. | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.<br><br>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.<br><br>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ... |
| 15. The method of claim 13, wherein television programming is displayed at said at least one of said plurality of receiver stations and said downloadable code programs said target processor to at least one of: | Column 19 lines 28-29. | ...and tuner, 215, to tune appropriately to "Wall Street Week."  | Page 445 line 35 to page 446 line 1.<br><br>Page 446 lines 17-21.  | ... and to tune monitor, 202M, in a predetermined fashion.<br><br>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio. ...   |
| (1) output at least   | Column 19 lines 48-53. | These signals instruct microcomputer, 205,   | Page 24 lines 5-16.  | Microcomputer, 205, evaluates the initial   |

| Claim Language  |  | Support to parent application filed November 3, 1981. |  | Support to instant specification.                               |  |
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| one of video, audio, and text in the context of said television programming;          |  |   | ...<br>... to generate several graphic video overlays, ...<br><br>... which microcomputer, <b>205</b> , has the means to generate and transmit and TV set, <b>202</b> , has the means to receive and display, and to ... | Page 451 lines 7-11.<br><br>Page 19 line 29 to page 20 line 20. | signal word or words which instruct it to ...<br><br>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.<br><br>Microcomputer, 205, is a conventional microcomputer system ... for generating computer graphic information; for receiving a composite video transmission; for combining said graphic information onto the video information of said transmission by graphic overlay techniques, well known in the art; and for outputting the resulting combined information to a TV monitor, 202M, in a composite video transmission. ... TV monitor, 202M, has capacity for receiving composite video and audio transmissions and for presenting a conventional television video image and audio sound. |
|   |  |   | ... transmit these overlays to TV set, <b>202</b> ,...   | Page 26 lines 4-8.  | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |
| (2) process a subscriber reaction to at least one of said television programming; and |  | Column 19 lines 63-64.                                | This signal is identified by decoder, <b>203</b> , and transferred via processor, <b>204</b> , to microcomputer, <b>205</b> .  | Page 26 lines 1-2.<br><br>Page 37 line 26 to page 38 line 8.    | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to  |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.               |  |
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|  | Reference   | Language   | Reference                                       | Language   |
|  | Column 19 line 53-56.                                 | Subsequently in the program, the host says, "Here is what the Dow Jones Industrials did is the past week," and a studio generated graphic is pictured. | Page 25 lines 26-33.                            | transfer said signals to said apparatus.<br><br>During this time the program may show the so-called "talking head" of the host as he describes the behavior of the stock market over the course of the week. Then the host says, "Now as we turn to the graphs, here is what the Dow Jones Industrials did in the week just past," and a studio generated graphic is transmitted. Fig. 1B shows the image of said graphic as it appears on the video screen of TV monitor, 202M. |
| (3) select information that supplements said television programming content. | Column 19 lines 64-66.                                | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...   | Page 26 lines 1-8.                              | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.  |
|  | Column 19 lines 48-53.                                | These signals instruct microcomputer, 205, ...<br><br>... to generate several graphic video overlays, ...  | Page 24 lines 5-16.<br><br>Page 451 lines 7-11. | Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...<br><br>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.  |
|  |   | ... which microcomputer, 205, has the means to generate and transmit and TV set, 202, has the means to receive and display, and to ...                 | Page 19 line 29 to page 20 line 20.             | Microcomputer, 205, is a conventional microcomputer system ... for generating computer graphic information; for receiving a composite video transmission; for combining said graphic information onto the video information of said transmission by graphic overlay techniques, well known in the art; and for outputting the resulting combined information to a TV monitor, 202M, in a   |

| Claim Language   | Support to parent application filed November 3, 1981.       |  | Support to instant specification.                                      |   |
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|  |   | ... transmit these overlays to TV set, 202,...   | Page 26 lines 4-8.   | <p>composite video transmission. ... TV monitor, 202M, has capacity for receiving composite video and audio transmissions and for presenting a conventional television video image and audio sound.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.</p>   |
| <p>16. The method of claim 13, wherein said signal incorporates a portion of said downloadable code.</p> | <p>Column 19 lines 43-44.</p> <p>Column 19 lines 46-53.</p> | <p>... instruction signals embedded in the "Wall Street Week" programming transmission.</p> <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, ... upon command.</p> | <p>Page 21 lines 23-24.</p> <p>Page 23 line 35 to page 24 line 16.</p> | <p>... instruction signals embedded in the "Wall Street Week" programming transmission.</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")</p> |

| Claim Language   |  | Support to parent application filed November 3, 1981.   | Support to instant specification.                                       |  |
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|  |  | Reference   | Language  | Reference  |
|  |  |   |   | <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)</p>  |
|  |  |   |   | <p>Page 44 lines 14-17.</p> <p>Page 26 lines 20-28.</p>  |
| 17. A method of gathering information on the use of at least |  | <p>Column 15 lines 27-30.</p> <p>FIG 5 illustrates methods for monitoring reception and operation which methods can be used to gather statistics on programing usage and associated uses of other data transmissions and equipment.</p> | <p>Page 312 line 33 to page 313 line 8.</p> <p>Page 28 lines 25-29.</p> | <p>Fig. 5 illustrates means and methods for monitoring receiver station reception and use of programming and modes of receiver station operation ... The means and methods facilitate the collection of statistics that identify not only what programming is received and displayed at given subscriber stations but also, for example, which local apparatus receives programming and which displays programming, how received programming is processed, what local apparatus is controlled in the course of processing ...</p> <p>[Signal processor 200 in Fig. 7 and elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining</p> |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference                        | Language  | Reference  | Support to instant specification.<br>Language   |
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| <p>one of a resource and</p> <p>a control signal at a receiver station, said receiver station having a</p> <p>processor,</p> | <p>Column 17 lines 21-24.</p> <p>Column 17 lines 13-16.</p> <p>Column 17 lines 13-16.</p> | <p>In this fashion, besides facilitating data gathering on how programing is used, signal processing apparatus and methods also permit the evaluation of how equipment is used.</p> <p>Every instruction or information signal transmitted from processor, 140, to microcomputer, 142, is also transmitted to signal processor, 130, ...</p> <p>Every instruction or information signal transmitted from processor, 140, to microcomputer, 142, is also transmitted to signal processor, 130, ...</p> | <p>Page 312 lines 33-35.</p> <p>Page 315 line 30 to page 316 line 6.</p> <p>Page 315 line 30 to page 316 line 6.</p> | <p>monitor records that document said availability and usage.</p> <p>Fig. 5 illustrates means and methods for monitoring receiver station reception and use of programming and <b>modes of receiver station operation</b> and exemplifies one embodiment...</p> <p>Decoder, 203, has means for detecting SPAM information in any programming transmission inputted to its associated apparatus, microcomputer, 205, and not only for detecting and transferring to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message of said transmissions but also for inputting selected detected information to microcomputer, 205, and for controlling microcomputer, 205, in selected fashions. (Fig. 5 also shows that decoder, 203, has capacity for inputting detected information to signal processor, 200, and for receiving from and transferring control information to signal processor, 200.)</p> <p>Decoder, 203, has means for detecting SPAM information in any programming transmission inputted to its associated apparatus, microcomputer, 205, and not only for detecting and transferring to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message of said transmissions but also for inputting selected detected information to microcomputer, 205, and for controlling microcomputer, 205, in selected fashions. (Fig. 5 also shows that decoder, 203, has capacity for inputting detected information to signal processor, 200, and for receiving from and transferring control information to signal processor, 200.)</p> |

| Claim Language   |                        | Support to parent application filed November 3, 1981.  | Support to instant specification.  |                                      |
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|  |                        | Reference  | Language   | Reference                            |
| at least one stored subscriber datum with independent receiver specific relevance, and | Column 19 lines 35-41. | Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day. It may receive these directly or it may automatically query a data service for them in a predetermined fashion. It records those prices that relate to the stocks in its stored portfolio. | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. (Said remote station transmits said closing stock price data and causes specific subscriber stations to select and process their specific information of interest in the fashion in which remote news-service-A station transmitted the AT&T news item and caused selected stations to select and process, in their specific fashions, the information of said item.) Alternatively, microcomputer, 205, is caused in a predetermined fashion (for example, by a SPAM message a given transmission monitored by signal processor, 200, in any of the above described fashions) automatically to telephone a remote data service computer, by means of network, 262, in a fashion well known in the art, and to cause said remote computer to select and transmit the particular closing price datum or data of the stock or stocks of the portfolio of said microcomputer, 205, thereby causing said microcomputer, 205, to record said datum or data in a predetermined fashion. | Page 449 lines 13-35.                |
| a controlled device, wherein said receiver station                                     | Column 19 lines 27-28. | ... and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on ...   | ...instructions causes controller, 20, to switch power on to monitor, 202M, ...<br>Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, ...  | Page 445 line 24 to page 446 line 1. |
| transfers said gathered  | Column 17 lines 16-17. | ... to be handled, recorded, and   | [Signal processor ... 200 in Fig. 7 ... and  | Page 28 lines 25-35                  |



| Claim Language  |                        | Support to parent application filed November 3, 1981.   | Support to instant specification.                                |  |
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|   |                        | Reference   | Language   | Reference  |
|   |                        | Reference   | Language   | Reference  |
| information to a remote station, said method comprising the steps of: |                        |   | transmitted to a remote site with all other monitor information. | elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring said meter records automatically to one or more remote automated billing stations that account for programming and information consumption and bill subscribers and said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage. |
| (1) identifying at least one of:                                      | Column 15 lines 57-62. | The signals for which the decoders are monitoring are likely to be unique digital codes that may identify each programming or data unit received and the source of each. They may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission. | Page 315 lines 20-24.  | Each one of said decoders is preprogrammed to detect and transfer to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message in the transmission to which its associated apparatus is tuned.  |
|   |                        |   | Page 44 lines 26-32.   | Commands often contain meter-monitor segments. Said segments contain meter information and/or monitor information, and the information of said segments causes subscriber station signal processor systems to assemble, record, and transmit meter records to remote billing stations and monitor records to remote ratings stations in fashions that are described more fully below.  |
|   |                        |   | Page 49 line 26 to Page 50 line 4.                               | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br>... unique codes for programming; ... and unique codes that identify the sources and suppliers of computer data.<br>... origins of transmissions (eg., network   |

| Claim Language  |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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|   |  | Reference   | Language  | Reference  | Language   |
|   |  | Column 17 lines 17-21.                                | In a predetermined fashion, signal processor, 130, identifies and marks the source of signals as coming from a device, 139, monitoring signal usage rather than programming usage and viewership. | <p>Page 28 lines 26-27.</p> <p>Page 322 lines 19-26.</p> <p>Page 174 lines 4-23.</p> | <p>source stations, broadcast stations, cable head end stations); dates and times ...</p> <p>... <b>monitor information that identifies what programming</b> is available, ...</p> <p>For example, in the case of the "Wall Street Week" program, transmitting the first and second SPAM messages of example #3 (which are not encrypted) will cause not only decoder, 203, to process the meter-monitor information of said messages and transmit the aforementioned 1st monitor information (#3) and 2nd monitor information (#3), via the monitor information bus means of Fig. 5, to onboard controller, 14A.</p> <p>Under control of said instructions, said match causes control processor, 39J, ... to transfer to said buffer/comparator, 14, header information that identifies a transmission of monitor information then particular decoder-203 information that is the source mark of said decoder, 203, ... then all of the received binary information of said first message that is recorded at said SPAM-input-signal memory; ... (Said received information is complete information of the first combining synch command, and said information transmitted to buffer/comparator, 14, is called, hereinafter, the "1st monitor information (#3).")</p> |
| (a) said resource to select for at least one of simultaneous presentation and sequential presentation with mass medium programming; and |  | Column 19 lines 27-29.                                | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week."  | Page 445 line 24 to page 446 line 1.   | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor,   |

| Claim Language  |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.       |  |
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|   |  | Reference   | Language  | Reference                               | Language   |
|   |  |   |   | Page 446 lines 17-21.                   | 202M, and to tune monitor, 202M, in a predetermined fashion.<br><br>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...   |
|   |  | Column 19 line 64 to column 20 line 1.                | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, for as long as it receives the same instruction signal from processor, 204. The viewer then sees a microcomputer generated graphic of his own stocks' performance ... | Page 26 lines 4-10.                     | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the ... |
| (b) said control signal which is effective to select said at least one subscriber datum |  | Column 19 lines 64-66.                                | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...  | Page 26 lines 1-8.                      | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.    |
|   |  | Column 18 lines 43-45.                                | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion.  | Page 419 line 34 to Page 420 line 2.    | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.  |
| for said at least one of simultaneous presentation and                                  |  | Column 19 lines 67 to column 20 line 2.               | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.   | Page 451 line 3.<br>Page 26 lines 8-11. | And the Fig. 1C combining is displayed.<br><br>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer   |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.                                  |   |
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|  | Reference   | Language  | Reference  | Language  |
| sequential presentation with said mass medium programming;       | Column 19 lines 59-60.                                | Then the host says, "And here is what your portfolio did."  | Page 25 lines 33-34.   | generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.<br><br>Then the host says, "And here is what your portfolio did."   |
|  | Column 19 line 67 to column 20 line 1.                | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...   | Page 26 lines 8-11.  | TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...   |
| (2) monitoring said identified at least one of said resource and | Column 17 lines 10-12.                                | Signal divider, 139, illustrates another type of monitoring that signal processing apparatus and methods can facilitate.  | Page 315 lines 25-28.  | In Fig. 5, decoder, 203, which is part of the signal processor system of the station of Fig. 5, not only monitors the operation of its associated apparatus, microcomputer, 205, but also controls said apparatus, ...  |
|  | Column 19 lines 17-23.                                | ... processor or monitor, 12, which reacts, in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X. | Page 435 lines 16-18.<br><br>Page 267 lines 20-28 from example #5. | In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...<br><br>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.) |
|  |   |   | Page 436 line 9 to page 437 line 3.                                | Receiving said Select-WSW-Program- Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW   |

| Claim Language       | Support to parent application filed November 3, 1981. |   | Support to instant specification.    |   |
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|                      | Reference   | Language  | Reference                            | Language  |
| said control signal; | Column 15 lines 27-30.                                | FIG 5 illustrates methods for monitoring reception and operation which methods can be used to gather statistics on programming usage and associated uses of other data transmissions and equipment. | Page 439 lines 14-15.                | <p>information and said ... enable-WSW-on-CC13...</p> <p>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, 20.</p> <p>... to receive the transmission of cable channel 13; ...</p> <p>Fig. 5 illustrates means and methods for monitoring receiver station reception and use of programming and modes of receiver station operation ... The means and methods facilitate the collection of statistics that identify not only what programming is received and displayed at given subscriber stations but also, for example, which local apparatus receives programming and which displays programming, how received programming is processed, what local apparatus is controlled in the course of processing ...</p> <p>[Signal processor 200 in Fig. 7 and elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used</p> |
|                      |   |   | Page 312 line 33 to page 313 line 8. |   |
|                      |   |   | Page 28 lines 25-29.                 |   |

| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference  | Support to instant specification.<br>Language   |
|----------------|--|--|--|---|
|                | Column 19 lines 17-23.   | <p>... processor or monitor, 12, which reacts, in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X.</p> | <p>Page 435 lines 16-18.</p> <p>Page 267 lines 20-28 from example #5.</p> <p>Page 436 line 9 to page 437 line 3.</p> | <p>and capacity for assembling and retaining monitor records that document said availability and usage.</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...</p> <p>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>Receiving said Select-WSW-Program- Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW information and said ... enable-WSW-on-CC13...</p> <p>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second</p> |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.   |  |
|---|---|---|---|--|
|   | Reference   | Language  | Reference   | Language   |
|   |   |   |   | <p>instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW -on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>... to receive the transmission of cable channel 13; ...</p>   |
| (3) storing a record of the use of said at least one of said resource and said control signal from said step of monitoring; and | Column 7 lines 65-67.                                 | Buffer/comparator, 14, has means for identifying, according to a predetermined fashion, which signals are to be recorded.   | Page 31 line 30 to page 32 line 6.  | <p>Buffer/comparator, 14, receives signal information that is meter information and/or monitor information ... organizes said received information into meter records and/or monitor records (called, in aggregate, hereinafter, "signal records") ... and transmits said signal records to a digital recorder, 16, and/or to one or more remote sites. ... has capacity to determine, in a predetermined fashion or fashions, what received information should be recorded, ...</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...</p> <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they</p> |
|   | Column 19 lines 18-20.                                | [processor or monitor, 12, reacts] ... in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. | <p>Page 435 lines 16-18.</p> <p>Page 267 lines 20-28 from example #5.</p> |  |

| Claim Language   |                        | Support to parent application filed November 3, 1981.  |                     | Support to instant specification.                     |  |
|--|------------------------|--|---------------------|---|--|
|  |                        | Reference  |                     | Reference   |  |
|  |                        | Language   |                     | Language  |  |
|  |                        |  |                     |   | can guide station control apparatus to desired programming.)   |
|  |                        |  |                     | Page 268 line 28 to page 269 line 12 from example #5. | In example #5, controller, 12, is preprogrammed to process monitor information, and completing the controlled functions invoked by any given message causes controller, 12, automatically to process the information of said message as monitor information, in the fashion of controller, 39, of decoder, 203, in example #3. ... Automatically, control processor, 12J, transfers to buffer/comparator, 14, via matrix switch, 12 I, header information that identifies a transmission of monitor information of available programming then all of the information that is recorded at said SPAM-input-signal memory. (In each example #5 case, the information that is transferred--together with its newly added header information--continues to be called by its previously assigned name; for example, the 1st-old-radio-program-message (#5).) |
| (4) communicating information evidencing said use of said identified at least one of said resource and said control signal from said step of storing from said receiver station to the remote station. | Column 17 lines 16-17. | ... to be handled, recorded, and transmitted to a remote site <b>with all</b> other monitor information. | Page 28 lines 25-35 |   | [Signal processor ... 200 in Fig. 7 ... and elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring said meter records automatically to one or more remote automated billing stations that account for programming and information consumption and bill subscribers and said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage.   |



| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |          |
|--|---|--|--|----------|
|  | Reference   | Language   | Reference  | Language |
| 18. The method of claim 17, wherein the stored evidence information at least one of identifies and designates at least one of: | Column 17 lines 17-21.                                | In a predetermined fashion, signal processor, 130, identifies and marks the source of signals as coming from a device, 139, monitoring signal usage rather than programing usage and viewership. | <p>Page 322 lines 19-26.</p> <p>For example, in the case of the "Wall Street Week" program, transmitting the first and second SPAM messages of example #3 (which are not encrypted) will cause not only decoder, 203, to process the meter-monitor information of said messages and transmit the aforementioned 1st monitor information (#3) and 2nd monitor information (#3), via the monitor information bus means of Fig. 5, to onboard controller, 14A.</p> <p>Under control of said instructions, said match causes control processor, 39J, ... to transfer to said buffer/comparator, 14, header information that identifies a transmission of monitor information then particular decoder-203 information that is the source mark of said decoder, 203, ... then all of the received binary information of said first message that is recorded at said SPAM-input-signal memory; ... (Said received information is complete information of the first combining synch command, and said information transmitted to buffer/comparator, 14, is called, hereinafter, the "1st monitor information (#3).")</p> |          |
| (1) mass medium programming;   | Column 15 lines 62-63.                                | [The signals for which the decoders are monitoring] may convey unique identifier codes for each program or commercial.   | <p>Page 49 lines 26-28.</p> <p>Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:</p> <p>...unique identifier codes for each program unit (including commercials);...</p>  |          |
|  | Column 16 lines 32-35.                                | For example, a person might instruct video cassette recorder, 135, automatically to record the NBC Network   | <p>Page 50 lines 6-7.</p> <p>For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast</p>  |          |

| Claim Language            | Support to parent application filed November 3, 1981. |   | Support to instant specification. |   |
|---------------------------|---|---|-----------------------------------|---|
|                           | Reference   | Language  | Reference                         | Language  |
| (2) a use of programming; |   | Nightly News as broadcast over station WNBC in New York City.   |                                   | over station WNBC in New York City.   |
|                           | Column 18 lines 30-35.                                | TV signal decoder, 203, and radio signal decoder, 211, also identify certain signals that monitors or processors, 204 and 210 respectively, determine to identify the programs, etc. on the channels to which TV set, 202, and radio, 209, are tuned, ... | Page 408 lines 18-29              | Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains the "program unit identification code" information of said particular television program, ...<br>Said message is detected at said decoder, 203, and inputted to said controller, 39, in the above escribed fashion. |
|                           |   |   | Page 414 lines 13-27              | Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains secondary "program unit identification code" information of the audio program unit of said radio transmission ...<br>Said message is detected at said decoder, 210, and inputted to said controller, 44.            |
|                           |   |   | Page 15 lines 16-22               | The frequencies may convey television, radio, or other programming transmissions. The input transmissions may be received by means of antennas or from hard-wire connections. The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions ...                     |
|                           |   |   | Page 411 lines 10-15              | ... because the station of Fig. 7 (and Fig. 7B) is preprogrammed to collect monitor information, receiving said ... message also causes the transmission of monitor information to the onboard controller, 14A, of said signal processor, 200, in the fashion of example #3 above.  |
|                           |   |   | Page 418 line 23 to               | Because the information of said ... message is  |

| Claim Language |                         | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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|                |                         | Reference   | Language  | Reference  | Language   |
|                |                         |   |   | page 419 line 15.  | transmitted periodically in said radio programming transmission, a subsequent instance of said information ... causes the SPAM decoder apparatus ... to transfer to the onboard controller, 14A, of signal processor, 200, ... a particular third transmission of monitor information containing ... "program unit identification code" information of the audio program unit of said radio transmission.  |
| (3)            | a transmission station; | Column 15 lines 60-62.                                | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission. | Page 49 lines 26-28.<br><br>Page 50 lines 1-4.                           | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...   |
| (4)            | a receiver station;     | Column 16 lines 56-61.                                | ... and, in a predetermined fashion, create a signal string<br><br>by appending digital information to the received signal which information might            | Page 180 lines 1-3.<br><br>Page 297 line 15.<br><br>Page 180 lines 4-15. | Then said process-monitor-info instructions cause onboard controller, 14A, to initiate a new monitor record that reflects the new "Wall Street Week" programming.<br><br>... creating a meter record that records the decryption....<br><br>Automatically, said instructions cause onboard controller, 14A, in a predetermined fashion, to delete ... except the source mark information associated with said record; to record information of said first named instance of "program unit identification code" information (which is the "program unit identification code" of said "Wall Street Week" program to a particular "program unit identification code" location at said record location; to select particular information located at said SPAM-input-signal-14A register memory and record information at said record location; to select particular preprogrammed record.... |

| Claim Language |                              | Support to parent application filed November 3, 1981. |  | Support to instant specification.                |  |
|----------------|------------------------------|---|--|--|--|
|                |                              | Reference   | Language   | Reference  | Language   |
|                |                              |   | identify the individual decoder, 131, 136, 138, 143, 145, 147, 149, or 150 and the time of receipt at signal processor, 130.   | Page 181 lines 8-14.                             | In a predetermined fashion, onboard monitor record field location at said record location a particular display unit identification code that identifies monitor, 202M, as the display apparatus of said new monitor record. In a predetermined fashion, signal processor, 200, records date and time information received from clock, 18, in first and last particular time field...   |
| (5)            | a network;                   | Column 16 lines 32-35.<br><br>Column 16 lines 39-41.  | For example, a person might instruct video cassette recorder, 135, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.<br><br>Each discrete bit of this information could be conveyed to recorder, 135, in a signal unit or units in the programming so received and recorded. | Page 319 lines 30-33.<br><br>Page 320 lines 2-8. | For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.<br><br>Each discrete bit of this information could be transmitted to the subscriber station of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information. |
| (6)            | a broadcast station;         | Column 15 lines 60-62.                                | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.  | Page 49 lines 26-28.<br><br>Page 50 lines 1-4.   | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...   |
| (7)            | a channel on a cable system; | Column 16 lines 35-41.                                | Recorder, 135, might receive the programming over Manhattan Cable TV channel 4 and record the programming from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be conveyed to recorder, 135, in a signal unit or units in  | Page 319 line 33 to page 320 line 8.             | Recorder, 217, might receive the programming over Manhattan Cable TV channel 4 and record the programming at the time of original broadcast transmission--from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be transmitted to the subscriber station  |

| Claim Language                                       |                        | Support to parent application filed November 3, 1981.  |   | Support to instant specification.                |   |
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|  |                        | Reference  | Language                                  | Reference  | Language  |
|  |                        |  | the programming so received and recorded. |  | of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information.   |
| (8) a time of transmission;                          | Column 15 lines 60-62. | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.                        |   | Page 49 lines 26-28.<br><br>Page 50 lines 1-4.   | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...  |
| (9) a unique identifier datum;                       | Column 15 lines 62-63. | [The signals for which the decoders are monitoring] may convey unique identifier codes for each program or commercial.   |   | Page 49 lines 26-28.<br><br>Page 50 lines 6-7.   | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... unique identifier codes for each program unit (including commercials);....  |
| (10) one of a source of data and a supplier of data; | Column 15 lines 63-65. | In the case of data transmitted to the micro-computer, [the signals for which the decoders are monitoring] may be unique codes that identify the source and suppliers of the data.   |   | Page 49 lines 26-28.<br><br>Page 50 lines 19-20. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include: ...<br><br>... unique codes that identify the sources and suppliers of computer data.  |
| (11) one of a distributor and an advertisement; and  | Column 15 lines 65-68. | In the case of data received at the printer, [the signals for which the decoders are monitoring] may identify publications, articles, publishers, distributors, advertisements, etc. |   | Page 321 lines 1-6.                              | Prerecorded, commercially distributed video and audio tapes, videodiscs, so-called "compact discs" of audio, and so-called "CD ROM" discs of data can also contain unique codes, embedded in the prerecorded programming, that identify the use and usage of said programming when said tapes or discs are played. For example, laser disc player, 232, can |

| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.   |   |
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|   | Reference   | Language   | Reference   | Language  |
|   |   |  | Page 360 lines 31-34.<br><br>Page 496 lines 12-13.<br><br>Page 496 lines 28-35. | For example, another of the aforementioned discounts and cents-off coupon specials is of a particular product ... that is advertised ...<br><br>At printer, 221, the printed so-called "hard copy" of said offer and coupon information emerges as:<br><br>.....<br>· 15 cents off                      15 cents off<br>· Nabisco Zweiback Teething Toast<br>·<br>·<br>·<br>·<br>·<br>·<br>·<br>..... |
| (12) an indication of copyright.  | column 20 lines 49-58.                                | ...and thence to printer, 221, for printing. Other signal decoder, 227, identifies a signal in the transmission received by printer, 221, which it passes via processor, 228, and buffer/comparator, 14, of signal processor, 200, to data recorder, 16. This signal indicates that the recipe, itself, has been received. Subsequently, when signal processor, 200, transfers the data in its data recorder, 16, via telephone to a remote site, that site can determine for billing purposes that the recipe was, first, ordered and, second, delivered. | Page 49 lines 26-28.<br><br>Page 50 lines 14-17.                                | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>...unique codes for programming (other than programming identified by program unit codes) whose use obligates users to make payments (eg., royalties and residuals),....  |
| 19. A method of controlling a remote intermediate mass medium programming transmitter station to communicate mass | Column 19 lines 60-63.                                | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission.   | Page 59 lines 29-33.  | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially   |

| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.   |   |
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|   | Reference   | Language   | Reference   | Language  |
| medium programming material to  |   |  |   | transmitted SPAM messages.<br><br>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.<br><br>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ... |
|   | Column 10 lines 24-28.                                | FIGS. 3A, 3B and 3C illustrates one instance of such use. FIGS. 3A, 3B, and 3C illustrate the use of Signal Processing Apparatus and Methods at a cable television system "head end" transmission facility that cablecasts several channels of television programming.   | Page 25 line 34 to page 26 line 1.<br><br>Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11.<br><br>Page 324 lines 18-21. | Fig. 6 illustrates Signal Processing Apparatus and Methods at an intermediate transmission station that is a cable television system "head end" and that cablecasts several channels of television programming.   |
| at least one receiver station,  | Column 17 lines 47-53.                                | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. | Page 390 lines 30-35.   | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.  |
| said at least one receiver station having at least one stored subscriber datum with | Column 19 lines 35-41.                                | Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day. It may   | Page 396 lines 8-10.<br><br>Page 449 lines 13-35.   | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.<br><br>Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at  |





| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification. |   |
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|   | Reference   | Language  | Reference                         | Language  |
| transmitter for transmitting said mass medium programming,  | Column 10 lines 43-47.                                | ... and/or to equipment that outputs them over various channels to the cable system's field distribution system, 93, which equipment includes here cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.   | Page 325 lines 1-4.               | simultaneously.<br>... apparatus that outputs said transmissions over various channels to the cable system's field distribution system, 93, which apparatus includes cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.   |
| a plurality of selective transfer devices each operatively connected to said one of said broadcast transmitter and said cablecast transmitter for communicating said mass medium programming, | Column 10 lines 41-43.                                | ... by means of conventional switches (here matrix switch, 75), to one or more video recorder/players, 76 and 78, ...   | Page 324 line 34-35.              | ... a conventional matrix switch, 75, well known in the art, one or more recorder/players, 76 and 78,   |
| a mass medium programming receiver for receiving said mass medium programming from  | Column 10 lines 30-39.                                | The facility receives programing from many sources. Transmissions may be received from satellites by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions can be received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions can be received by antenna, 60, and TV demodulator, 61. Other electronic programing input means, 62, can receive programming transmissions. | Page 324 lines 23-31.             | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. |
| at least one origination transmitter station,   | Column 19 lines 60-63.                                | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission.  | Page 59 lines 29-33.              | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.  |

| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference  | Support to instant specification.<br>Language  |
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| a control signal detector, and                            | Column 11 lines 3-5.   | Signal processor, 71, has means, described above, to identify and separate the instruction and information signals from their associated programming and ... | <p>Page 25 line 34 to page 26 line 1.</p> <p>Page 90 lines 4-7. Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11.</p> <p>Page 325 line 34 to page 326 line 7.</p> | <p>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.</p> <p>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ...</p> <p>At signal processor system, 71, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station;....</p> <p>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.</p> |
| one of a controller and a computer capable of controlling | Column 11 lines 15-17.   | Cable program controller and computer, 73, is the central automatic control unit for the transmission facility.  | Page 326 lines 19-20.  | Cable program controller and computer, 73, is the central automatic control unit for the transmission station.   |
| at least one of said selective transfer                   | Column 11 lines 44-46.   | Controller/computer, 73, has means for communicating control information with  | Page 328 lines 14-16.  | Computer, 73, has means for communicating control information with matrix switch, 75,  |

| Claim Language  |  | Support to parent application filed November 3, 1981.  |  | Support to instant specification.  |          |
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| devices, and with said remote transmitter station adapted to detect the presence of at least one control signal , | Column 11 lines 3-5.   | matrix switch, 75, and video recorder/players, 76 and 78.<br><br>Signal processor, 71, has means, described above, to identify and separate the instruction and information signals from their associated programming and ...  | and video recorders, 76 and 78, ....<br><br>At signal processor system, 71, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station;....<br><br>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.<br><br>This base band signal is then transferred through separate paths to three separate detector devices.<br><br>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.<br><br>Determining that particular incoming programming is scheduled for time deferred transmission can cause computer, 73, to cause the recording of said programming. For example, computer, 73, receives a given | Page 325 line 34 to page 326 line 7.<br><br>Page 59 lines 29-33<br><br>Page 34 line 35 to page 35 line 1.<br><br>Page 59 lines 29-33.<br><br>Page 329 line 2-20. |          |
| to control the communication of said mass medium programming  | Column 6 lines 48-50.<br><br>Column 8 lines 58-59.<br><br>Column 11 lines 57-64. | This base band signal is then transmitted through separate paths to three separate detector devices.<br><br>Control signals can be passed to the apparatus by means of the programming transmissions ...<br><br>Similarly, if controller/computer, 73, determines that incoming programming should be recorded for delayed transmission, controller/ computer, 73, selects a video recorder/player, 76 or 78, in |  |  |          |

| Claim Language  | Support to parent application filed November 3, 1981. | Support to instant specification.  | Language   |
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| <p>in response to said at least one control signal, and</p> | <p>Column 11 lines 38-46.</p>                         | <p>a predetermined fashion, to record the incoming programming, instructs matrix switch, 75, to transfer the programming to the designated recorder/player, 76 or 78, ...</p> <p>By comparing identification signals on the incoming programming with the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming.</p> <p>Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video recorder/players, 76 and 78.</p> | <p>SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 67. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular preprogrammed schedule information of programming that is scheduled to be recorded upon receipt and transmitted to the field system, 93, at a later time. So determining causes computer, 73, in its preprogrammed fashion, to select a video recorder/player, 76 or 78; ... and to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 67) from television receiver, 58, to the output that leads to said selected recorder, 76 or 78.</p> <p>Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.</p> <p>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.</p> <p>SPAM signals are generated at original transmission stations or intermediate</p> |
|   |   | <p>Page 327 line 35 to page 328 line 13.</p>   |  |
|   |   | <p>Page 84 lines 26-28.</p>  |  |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.                                      |  |
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|  | Reference   | Language  | Reference  | Language   |
| to deliver at said one of said broadcast transmitter and said cablecast transmitter said mass medium programming, said method comprising the steps of:                                       | Column 11 lines 30-31.                                | ... transmit each program unit to cable field distribution system, 93.  | Page 28 lines 26-27.<br>Page 49 lines 26-27.<br>Page 328 lines 14-16.  | transmission stations and embedded in television or radio or other programming transmissions....<br>... monitor information that identifies what programming is available, ...<br>Meter-monitor segments contain meter information and/or monitor information.<br>Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ...  |
|  | Column 10 lines 49-52.                                | When played on video recorder and players, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted to the field. | Page 326 line 35 to page 327 line 2.<br>Page 328 line 13.              | ... each program unit, ... the station should transmit the unit, ...<br>... transmit the programming of each received program unit.  |
|  | Column 19 lines 60-62.                                | At this point, an instruction signal is generated in the television studio originating the programming ...  | Page 325 lines 6-9.<br>Page 59 lines 29-33.                            | When played on video recorders, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted via switch 75 to field distribution system, 93.<br>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The Information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages. |
| (1) receiving at said at least one origination transmitter station said mass medium programming to be transmitted by the remote intermediate mass medium programming transmitter station and |   |   | Page 25 lines 34-35.<br>Page 90 lines 4-7.<br>Applicants teach this as | At this point, an instruction signal is generated at said program originating studio, ...<br>The second message is of the information associated with the second combining synch   |

| Claim Language  |   | Support to parent application filed November 3, 1981.   |   | Support to instant specification.   |          |
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|   |   | Reference   | Language  | Reference   | Language |
| delivering said mass medium programming to at least one origination transmitter,                      | Column 19 lines 62-63                   | ... and [the instruction signal] is transmitted in the programming transmission.  | the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11. | command. Said second command has a "00" header, an execution segment, and a meter-monitor segment of five fields and addresses URS microcomputers, 205.   |          |
| said mass medium programming having an instruct signal  | Column 19 lines 63-64.                  | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.                       | Page 25 line 34 to page 26 line 1.  | ... an instruction signal is ... embedded in the programming transmission, and transmitted.   |          |
| which is effective at said at least one receiver station to select said at least one subscriber datum | Column 19 lines 64-66.                  | This signal instructs microcomputer, 205, to transmit the <b>first</b> overlay to TV set, 202,...                           | Page 26 lines 1-2.  | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...   |          |
| for at least one of simultaneous presentation and   | Column 19 lines 67 to column 20 line 2. | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic. | Page 37 line 26 to page 38 line 8.  | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |          |
|   |   |   | Page 26 lines 1-8.  | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |          |
|   |   |   | Page 451 line 3.  | And the Fig. 1C combining is displayed.   |          |
|   |   |   | Page 26 lines 8-11.   | TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer   |          |

| Claim Language   |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.     |   |
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|  |  | Language  |   | Language                              |   |
| sequential presentation with said mass medium programming;   |  | Column 19 lines 59-60.                                | Then the host says, "And here is what your portfolio did."  | Page 25 lines 33-34.                  | generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.<br><br>Then the host says, "And here is what your portfolio did."   |
|  |  | Column 19 line 67 to column 20 line 1.                | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...   | Page 26 lines 8-11.                   | TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...   |
| (2) receiving said at least one control signal which   |  | Column 11 lines 3-14.                                 | Signal processor, 71, has means, described above, to identify and separate the instruction and information signals from their associated programming and pass them, along with information identifying the channel source of each signal, externally to code reader, 72. ...<br>Code reader, 72, passes the received signals, with channel identifiers, to cable program controller and computer, 73. | Page 325 line 34 to page 326 line 11. | At signal processor system, 71, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station, automatically adds, in a predetermined fashion source mark information that identifies said associated distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; and transfers said selected messages, with said source mark information, to code reader, 72. |
| at the remote intermediate mass medium programming transmitter station operates to control the communication of said |  |   |   | Page 326 lines 16-18.                 | Code reader, 72, buffers and passes the received SPAM message information, with source mark information, to cable program controller and computer, 73.  |
|  |  | Column 11 lines 38-46.                                | By comparing identification signals on the incoming programming with the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the   | Page 327 line 35 to page 328 line 13. | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73,  |

| Claim Language   |  | Support to parent application filed November 3, 1981. | Support to instant specification.   |  |
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|  |  | Reference   | Language  | Reference  |
| mass medium programming; and   | (3) transmitting said at least one control signal from said at least one origination transmitter | Column 19 lines 60-63.                                | head end facility should transmit the programming.<br>Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video recorder/players, 76 and 78. | determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit. |
|  |  |   |   | SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....  |
|  |  |   |   | ... monitor information that identifies what programming is available, ...   |
|  |  |   |   | Meter-monitor segments contain meter information and/or monitor information.   |
|  |  |   |   | Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ...  |
| (3) transmitting said at least one control signal from said at least one origination transmitter |  | Page 59 lines 29-33.                                  | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission.                                    | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.   |
|  |  |   | Page 25 line 34 to page 26 line 1.  | At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.   |



| Claim Language         | Support to parent application filed November 3, 1981.<br>Reference  | Language | Reference   | Support to instant specification.<br>Language   |
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|                        |   |          | <p>Page 90 lines 4-7.<br/>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11.</p> <p>Page 327 line 35 to page 328 line 13.</p> | <p>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ...</p> <p>Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.</p> <p>By comparing selected <b>meter-monitor information of said message information</b> with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.</p> <p>SPAM signals are generated at original transmission stations or intermediate transmission stations and <b>embedded in television or radio or other programming transmissions</b> ...</p> <p>... <b>monitor information that identifies what programming</b> is available, ...</p> <p>Meter-monitor segments contain meter information and/or monitor information.</p> |
| Column 11 lines 38-39. | By comparing identification signals on the incoming programming ... |          | <p>Page 84 lines 26-28.</p> <p>Page 28 lines 26-27.</p> <p>Page 49 lines 26-27.</p>   |   |



| Claim Language  |  | Support to parent application filed November 3, 1981.   |   | Support to instant specification.  |  |
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|   |  | Reference   | Language  | Reference  | Language   |
|   |  |   |   | Page 49 lines 26-27.   | Meter-monitor segments contain meter information and/or monitor information. |
| 21. The method of claim 19, wherein said signal includes at least one of a code and a datum which operates at the remote intermediate mass medium programming transmitter station to identify said mass medium programming, said method further comprising the step of: | Column 2 lines 63-66.<br><br>Column 3 lines 6-8.<br><br>Column 11 lines 38-39. | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ...<br><br>Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.<br><br>By comparing identification signals on the incoming programming with the programming schedule ... | Page 14 lines 27-29.<br><br>Page 14 line 35 to page 15 line 2.<br><br>Page 327 line 35 to page 328 line 13.<br><br>Page 84 lines 26-28. | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ...<br><br>Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.<br><br>Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.<br><br>SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions.... |  |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.                        |  |
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|  | Reference   | Language  | Reference  | Language   |
| transmitting a schedule which operates at the remote intermediate mass medium programming transmitter station to |   |   | <p>Page 28 lines 26-27.</p> <p>Page 49 lines 26-27.</p>  | <p>... monitor information that identifies what programming is available, ...</p> <p>Meter-monitor segments contain meter information and/or monitor information.</p>  |
|  | Column 11 lines 39-41.                                | ... the programing schedule received earlier from local input, 74, and/or from a remote site via network, 98, ...   | <p>Page 328 lines 9-10.</p> <p>Page 326 lines 28-30.</p> | <p>... with information of the programming schedule, received earlier from input, 74, and/or network, 98, ...</p> <p>... receiving input information from local input, 74, and from remote stations via telephone or other data transfer network, 98.</p>  |
|  | Column 11 lines 38-43.                                | By comparing identification signals on the incoming programing with the programing schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programing. | <p>Page 327 line 35 to page 328 line 13.</p>             | <p>Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.</p> <p>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.</p> |
|  |   |   | <p>Page 84 lines 26-28.</p> <p>Page 28 lines 26-27.</p>  | <p>SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions...</p> <p>... monitor information that identifies what</p>  |

| Claim Language   |                        | Support to parent application filed November 3, 1981.  | Support to instant specification.  |  |
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|  |                        | Reference  | Language   | Reference  |
| communicate said mass medium programming to a first transmitter at said specific time. | Column 11 lines 50-57. | ... if controller/computer, 73, determines that programing incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. | programming is available, ...<br>Meter-monitor segments contain meter information and/or monitor information.<br>For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular preprogrammed schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87. In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87. | Page 49 lines 26-27.<br>Page 328 line 22 to page 329 line 1. |
|  |                        |  |  |  |
| 22. A method of controlling at least   | Column 10 lines 15-20. | FIGS. 1, A, 2B, and 2C, and their variants as appropriate, can be used to automate the operations of an intermediate transmission point whether it be a broadcast station transmitting only a single channel of programming or a cable system cablecasting many channels.  | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of intermediate transmission stations that receive and retransmit programming. The stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and may range in scale of operation from wireless broadcast stations that transmit a single programming transmission to cable systems that cablecast many channels simultaneously.  | Page 324 lines 8-17.   |

| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.   |  |
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|   | Reference   | Language   | Reference   | Language   |
| one of  | Column 17 lines 47-53.                                | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. | Page 390 lines 30-35.   | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.   |
| a plurality of receiver stations, each of said plurality of receiver stations including | Column 3 lines 48-51.                                 | Another method has application at receiver sites such as private homes or public places like theaters, hotels, brokerage offices, etc., whether commercial establishments or not.  | Page 396 lines 8-10.  | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.   |
| a mass medium programming receiver,   | Column 20 lines 16-19.                                | Suppose a viewer watches a television program on cooking techniques that is received on TV set, 202, via box, 201. Julia Childs's "The French Chef" is one such program.   | Page 12 lines 30-35.  | It is the further purpose of this invention to provide means and methods for the automation of ultimate receiver stations, ... Such ultimate receiver stations may be private homes or offices or commercial establishments such as theaters, hotels, or brokerage offices.  |
| a signal detector,  | Column 20 lines 27-29.                                | ... a signal is identified in the incoming programming on TV set, 202, by decoder, 203, ...  | Page 470 lines 1-3 and<br>Page 470 lines 9-12.<br><br>Page 470 lines 19-21. | ... transmits the programming transmission of a particular conventional television program on cooking techniques that is called "Exotic Meals of India."<br><br>At the station of Fig. 7 and 7F (which station is a subscriber station of the intermediate station of Fig. 6), in the fashions described above, apparatus is caused to receive the particular transmission of said program that is ...<br><br>... to display the television information of said transmission (that is, information of said audio and video) at monitor, 202M.<br><br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ... |

| Claim Language   |                        | Support to parent application filed November 3, 1981.   |                                      | Support to instant specification.   |  |
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| Language   |                        | Language  |                                      | Language  |  |
| at least one computer or processor,  | Column 20 lines 29-30. | ... which is also transferred by processor, 204, to buffer/comparator, 8, of signal processor, 200. | Page 472 lines 4-12.                 | ... Automatically, the controller, 39, of decoder, 145, ... transfers said message to said controller, 20.  |  |
| at least one stored subscriber datum with independent receiver specific relevance, wherein | Column 20 lines 37-42. | The signal transmission from processor, 204, also passes a signal word to signal processor, 200,    | Page 37 line 26 to page 38 line 8.   | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |  |
|  |                        |   | Page 477 lines 8-23.                 | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...   |  |
|  |                        |   | Page 281 lines 1-6.                  | By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control.</b> ")   |  |
|  |                        | which, in a predetermined fashion, signal processor, 200, decrypts and transfers                    | Page 282 line 2 to page 283 line 33. | ... the information of said segments is encrypted prior to transmission ...<br>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st  |  |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language  | Support to instant specification.<br>Reference                          | Language   |
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| each of said plurality of receiver stations is adapted to detect the presence of at least one control signal and | Column 20 lines 27-32.   | <p>to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.</p> <p>Five minutes later, a signal is identified in the incoming programming on TV set, 202, by decoder, 203, which is also transferred by processor, 204, to buffer/comparator, 8, of signal processor, 200. This signal instructs buffer/comparator, 8, that, if 567 has been received from signal generator, 225, ...</p> | <p>Page 478 lines 1-5.</p> <p>Page 471 line 26 to page 472 line 17.</p> | <p>supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ...</p> <p>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".</p> <p>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)</p> <p>Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for-entered-information-and-process instructions, ...</p> <p>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 20, of signal processor, 200. ...</p> <p>Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV 567# information exists at said last-local-input-# memory ...</p> <p>Halfway through the program the host says,</p> |



| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference             | Support to instant specification.<br>Language   |
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| to input a subscriber reaction to an offer communicated in mass medium programming, said method comprising the steps of: | Column 20 lines 19-26.   | Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input." The viewer then presses buttons 567 on local input, 225, which signal is conveyed to the buffer/comparator, 8 (referring to Fig. 1), of signal processor, 200, to hold and process further ... | Page 471 lines 6-25.  | "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#". Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ... --enters TV567#, in a fashion well known in the art, at the keyboard of the specific local input, 225, of his own station which causes said input, 225, to transmit a particular preprogrammed process-local-input instruction and said TV567# information to the controller, 20, of the signal processor, 200, of said station.<br><br>Receiving said instruction and information causes the controller, 20, at each station where TV567# is entered, in a predetermined fashion, to retain said TV567# information at particular last-local-input-# memory. |
| (1) receiving at least one of a code and a datum at a transmitter station,   | Column 10 lines 61-64.   | Incoming programming transmissions are received at the relevant receiver points, antennas, 50, 57, and 60, and other means, 62. They are fed along the conventional paths described above.   | Page 324 lines 23-33. | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire...   |
|  | Column 4 lines 5-6.  | These techniques employ signals  | Page 13 lines 25-26.  | The present invention employs signals   |

| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference                                    | Support to instant specification.<br>Language  |
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|   | Column 20 lines 27-33.   | <p>embedded in programs.</p> <p>Five minutes later, a signal is identified in the incoming programming on TV set, 202, by decoder, 203, which is also transferred by processor, 204, to buffer/comparator, 8, of signal processor, 200. This signal instructs buffer/comparator, 8, that, if 567 has been received from signal generator, 225, signal processor, 200, should, ...</p> | <p>Page 471 line 26 to page 472 line 17.</p> | <p>embedded in programming.</p> <p>Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for- entered-information-and-process instructions, ...</p> <p>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 20, of signal processor, 200. ...</p> <p>Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory and to cause ...</p> <p>Receiving said instruction and information causes the controller, 20, at each station where TV567# is entered, in a predetermined fashion, to retain said TV567# information at particular last-local-input-# memory.</p> |
| <p>said at least one of said code and said datum designating at least one of:</p> <p>(a) a product and a service offered in said mass medium programming; and</p> | Column 20 lines 26-27.   | <p>... to hold and process further in a predetermined fashion.</p>  | <p>Page 471 lines 22-25.</p>                 | <p>(An alternate method for inputting said second message to the microcomputers, 205, at stations where TV567# is entered at a local input, 225, is to embed said message in a particular second transmission that is different from the transmission of said "Exotic Meals of India" programming and to cause a selected ALL signal decoder, 290, at each one of said stations to receive said second transmission, thereby causing said decoder, 290, to detect and transfer the information of said second message to the microcomputer, 205, of said station.</p>  |
|   | Column 20 lines 33-36.   | <p>... instruct tuner, 223, to tune cable converter box, 222, to the appropriate channel to receive the recipe in encoded digital form ...</p>  | <p>Page 476 line 34 to page 477 line 8.</p>  |  |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.     |   |
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|  | Reference   | Language  | Reference                             | Language  |
|  |   |   | Page 477 lines 8-17.                  | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations to cause the tuner, 223, of a selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to establish a programming communication link between said selected converter box, 222, and said decoder, 290; to cause the appropriate receiver apparatus of said decoder, 290, to receive said transmission....   |
| (b) said subscriber reaction;  | Column 20 lines 31-33.                                | ... that, if 567 has been received from signal generator, <b>225</b> , signal processor, <b>200</b> , should, in a predetermined fashion, ...   | Page 472 lines 15-17.                 | ... and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory ...  |
| (2) receiving at said transmitter station an instruct signal which is effective at said at least one of said plurality of receiver stations to | Column 10 lines 61-64.                                | Incoming programing transmissions are received at the relevant receiver points, antennas, <b>50</b> , <b>57</b> , and <b>60</b> , and other means, <b>62</b> . They are fed along the conventional paths described above. | Page 324 lines 23-33.                 | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire... |
|  | Column 4 lines 5-6.                                   | These techniques employ signals embedded in programs.   | Page 13 lines 25-26.                  | The present invention employs signals embedded in programming.  |
|  | Column 20 lines 27- 31.                               | Five minutes later, a signal is identified in the incoming programming on TV set, <b>202</b> , by decoder, <b>203</b> , which is also transferred by processor, <b>204</b> , to buffer/comparator,                        | Page 471 line 26 to page 472 line 17. | Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that  |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language   | Support to instant specification.<br>Reference   | Language   |
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| select said at least one subscriber datum for at least one of simultaneous presentation and sequential presentation with said mass medium programming; | Column 20 lines 37-42.   | <p>8, of signal processor, 200. This signal instructs buffer/comparator, 8, that, if 567 ...</p> <p>The signal transmission from processor, 204, also passes a signal word to signal processor, 200,</p> <p>which, in a predetermined fashion, signal processor, 200, decrypts and transfers</p> | <p>Page 477 lines 8-23.</p> <p>Page 281 lines 1-6.</p> <p>Page 282 line 2 to page 283 line 33.</p> | <p>consists of ... check-for-entered-information-and-process instructions, ...</p> <p>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 20, of signal processor, 200. ...</p> <p>Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory ...</p> <p>In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...</p> <p>By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called "<b>covert control</b>.")</p> <p>... the information of said segments is encrypted prior to transmission ...</p> <p>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message.</p> |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference                                   | Support to instant specification.<br>Language  |
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|  |  | <p>to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.</p>  | <p>Page 478 lines 1-5.</p>                  | <p>Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ...</p> <p>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".</p> <p>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)</p>  |
| (3) transferring at least one of said at least one of said code and said datum and said instruct signal to a transmitter at said transmitter station | Column 11 lines 50-57.   | <p>... if controller/computer, 73, determines that programing incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programing transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.</p> | <p>Page 328 line 22 to page 329 line 1.</p> | <p>For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular preprogrammed schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87. In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs</p> |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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|   | Reference   | Language  | Reference                          | Language   |
| <p>at a specific time; and</p>  | Column 4 lines 5-6.                                   | These techniques employ signals embedded in programs.   | Page 13 lines 25-26.               | to modulator, 87.  |
|   | Column 2 lines 63-66.                                 | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ... | Page 14 lines 27-29.               | The present invention employs signals embedded in programming.<br><br>(The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ...  |
|   | Column 3 lines 6-8.                                   | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   | Page 14 line 35 to page 15 line 2. | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.  |
|   | Column 20 line 27.                                    | Five minutes later, ...   | Page 471 lines 26-28.              | Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message ...  |
| (4) transmitting said at least one of said and said datum and said instruct signal from said transmitter station. | Column 12 lines 45-47.                                | Beyond channel combining system and multiplexer, 92, amplifier, 94, transmits programming to signal processor, 71, and signal processor, 96, ...  | Page 337 lines 1-8.                | Fig. 6 shows particular signal processor system monitoring apparatus associated with the intermediate station of Fig. 6. In field distribution system, 93, amplifier, 94, inputs programming transmissions to signal processor system, 71, (where said transmissions are inputted to one alternate contact of the switch, 1, of the signal processor of said system, 71), and amplifier, 95, inputs programming transmissions to signal processor, 96, ... |
|   | Column 4 lines 5-6.                                   | These techniques employ signals embedded in programs.   | Page 13 lines 25-26.               | The present invention employs signals embedded in programming.   |
|   | Column 2 lines 63-66.                                 | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ... | Page 14 lines 27-29.               | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ...  |

| Claim Language |  | Support to parent application filed November 3, 1981.   | Support to instant specification.       |  |
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|                |  | Reference   | Language                                | Reference  |
|                | Column 3 lines 6-8.  | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   | Page 14 line 35 to page 15 line 2.      | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.  |
|                | Column 20 lines 27-33.   | Five minutes later, a signal is identified in the incoming programming on TV set, <b>202</b> , by decoder, <b>203</b> , which is also transferred by processor, <b>204</b> , to buffer/comparator, <b>8</b> , of signal processor, <b>200</b> . This signal instructs buffer/comparator, <b>8</b> , that, if 567 has been received from signal generator, <b>225</b> , signal processor, <b>200</b> , should, ... | Page 471 line 26 to page 472 line 17.   | Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for- entered-information-and-process instructions, ...<br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 20, of signal processor, 200. ...<br>Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory and to cause ... |
| 23.            | The method of claim 22, wherein at least one of said instruct signal and said at least one of said code and said datum is embedded in one of a television signal and a signal containing television programming. | Column 20 lines 27-29.<br>... a signal is identified in the incoming programming on TV set, <b>202</b> , by decoder, <b>203</b> , ...   | Page 471 line 35 to page 472 line 1.    | At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ...  |
| 24.            | The method of  | Column 19 lines 43-44.  | ... instruction signals embedded in the | ... instruction signals embedded in the "Wall  |

| Claim Language  |                        | Support to parent application filed November 3, 1981.   | Support to instant specification.  |
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|   |                        | Language  | Language   |
|   |                        | Reference   | Reference  |
| claim 22, wherein said instruct signal incorporates a portion of downloadable code. | Column 19 lines 46-53. | <p>"Wall Street Week" programming transmission.</p> <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, ... <b>upon command.</b></p> | <p>Street Week" programming transmission.</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in</p> |
|   |                        |   | <p>Page 23 line 35 to page 24 line 16.</p> <p>Page 44 lines 14-17.</p> <p>Page 26 lines 20-28.</p>   |
|   |                        |   |  |



| Claim Language  |   | Support to parent application filed November 3, 1981.  |          | Support to instant specification.       |  |
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|   |   | Reference  | Language | Reference                               | Language   |
|   |   |  |          |   | that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)   |
| 25. The method of claim 22, wherein said mass medium programming is displayed at said at least one of said plurality of receiver stations | Column 19 lines 5-8.                    | In another example, microcomputer, <b>205</b> may be preinformed that a certain television program, hypothetically "Wall Street Week," should be televised on TV set, <b>202</b> , when it is cablecast. |          | Page 428 lines 21-26.                   | The program-unit-of-interest information preprogrammed at the microcomputer, <b>205</b> , of the station of Figs. 7 and 7C includes particular specific-WSW information that reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted. |
| and said at least one control signal directs the output of at least one of video,   | Column 19 lines 67 to column 20 line 2. | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.  |          | Page 451 line 3.<br>Page 26 lines 8-11. | And the Fig. 1C combining is displayed.<br>TV monitor, <b>202M</b> , then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.   |
| audio,  | Column 18 lines 19-22.                  | These signals instruct switch, <b>212</b> , to turn power on to radio, <b>209</b> , and its associated equipment, including a conventional digital tuner, <b>213</b> .                                   |          | Page 410 lines 10-11.                   | Receiving said SPAM message causes said controller, <b>44</b> , switch power on to ... radio, <b>209</b> , ...   |
| and text to supplement said mass medium programming   | Column 20 lines 46-49.                  | When the transmission of the recipe is received, box <b>222</b> , transfers the transmission to decrypter, <b>224</b> , for decryption and thence to printer, <b>221</b> , for printing.                 |          | Page 473 lines 3-13.                    | One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b> ... instructions ...   |
|   |   |  |          | Page 477 lines 12-17.                   | ... selected converter box, <b>222</b> , to tune said box, <b>222</b> , to receive said second transmission; to cause the matrix switch, <b>258</b> , to ... link ... said selected converter box, <b>222</b> , and said decoder, <b>290</b> ; ... said decoder, <b>290</b> , to receive said transmission....         |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |   |
|--|---|---|--|---|
|  | Reference   | Language  | Reference  | Language  |
| and said mass medium programming prompts a subscriber to react, said method further comprising the steps of:   | Column 20 lines 19-23.                                | Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input." | <p>Page 477 lines 23-29.</p> <p>Page 478 lines 1-5.</p> <p>Page 475 lines 1-2.</p> <p>Page 471 lines 6-13.</p> | <p>... causes ... said decoder, 290, to detect and process properly the information of said second message.</p> <p>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)</p> <p>Receiving said output information causes printer, 221, to print the information of said specific recipe and list.</p> <p>Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#".</p> |
| communicating to said transmitter; and transmitting said control signal which is effective at said at least one of said plurality of receiver stations to at least one of: | Column 18 lines 14-17.                                | TV signal decoder, 203, detects signals in the programming transmission on the channel which signals it transfers to monitor or processor, 204.   | Page 408 lines 18-29.  | <p>Periodically thereafter, said program originating studio embeds in said transmission and transmits a particular Tune-Radio-to-FM-104.1 SPAM message that consists of a "01" header, an execution segment of particular activate-simulcast information that is addressed to URS radio decoders, 210, a meter-monitor segment that contains the "program unit identification code" information of said particular television program, appropriate padding bits, an information segment that contains particular 104.1-MHz information, and an end of file signal.</p> <p>Said message is detected at said decoder, 203, and inputted to said controller, 39, ....</p>  |

| Claim Language                                 | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference   | Support to instant specification.<br>Language  |
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|  | Column 19 lines 60-65.   | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, ... | <p>Page 25 line 33 to page 26 line 2.</p> <p>Page 37 line 26 to page 38 line 8.</p> | <p>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, ...</p> |
|  | Column 20 lines 27-29.   | ... a signal is identified in the incoming programming on TV set, 202, by decoder, 203, ...  | <p>Page 26 line 4.</p> <p>Page 471 line 35 to page 472 line 1.</p>                  | <p>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ...</p>   |
| (a) output at least one of supplemental video, | Column 19 lines 67 to column 20 line 2.                            | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.  | <p>Page 451 line 3.</p> <p>Page 26 lines 8-11.</p>                                  | <p>And the Fig. 1C combining is displayed.</p> <p>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer</p>  |

| Claim Language                        |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.  |  |
|---------------------------------------|------------------------|---|--|--|--|
|                                       | Reference              | Language  | Reference  | Language   |  |
| supplemental audio, and               | Column 18 lines 26-28. | Automatically, by turning TV set, 202, to the channel with a stereo simulcast, the person has activated the stereo simulcast. | Page 411 lines 6-9.  | generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.                        |  |
|                                       | supplemental text; and | Column 20 lines 46-49.  | When the transmission of the recipe is received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing. | Page 473 lines 3-13.   | Thus switching power on to TV set, 202, and selecting channel 13 at television tuner, 215, are the only manual steps necessary to actuate the radio simulcast of said channel at radio, 209.   |
| (b) process said subscriber reaction. |                        |   |  | Page 477 lines 12-17.  | One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... generate-recipe... instructions ...                               |
|                                       |                        |   |  | Page 477 lines 23-29.  | ... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission.... |
|                                       |                        |   |  | Page 478 lines 1-5.  | ... causes ... said decoder, 290, to detect and process properly the information of said second message.   |
|                                       |                        |   |  | Page 475 lines 1-2.  | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)                           |
|                                       |                        |   |  |  | Receiving said output information causes printer, 221, to print the information of said specific recipe and list.  |
|                                       | Column 20 lines 23-26. | The viewer then presses buttons 567 on local input, 225, which signal is conveyed to the buffer/comparator, 8 (referring to   | Page 471 lines 14-21.  | Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ... --enters TV567#, in a fashion well known in |  |

| Claim Language  |                        | Support to parent application filed November 3, 1981   |  | Support to instant specification. |   |  |  |
|---|------------------------|--|--|-----------------------------------|---|--|--|
| Reference   |                        | Language   |  | Reference                         |   | Language   |  |
|   |                        |  | Fig. 1), of signal processor, 200, ... |                                   |   |  | the art, at the keyboard of the specific local input, 225, of his own station which causes said input, 225, to transmit a particular preprogrammed process-local-input instruction and said TV567# information to the controller, 20, of the signal processor, 200, of said station. |
| 26. The method of claim 22, wherein said mass medium programming is text. | Column 20 lines 46-49. | When the transmission of the recipe is received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing. |  | Page 473 lines 3-13.              | One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... generate-recipe... instructions ...<br><br>... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....<br><br>... causes ... said decoder, 290, to detect and process properly the information of said second message.<br><br>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)<br><br>Receiving said output information causes printer, 221, to print the information of said specific recipe and list. | Page 477 lines 12-17.<br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><b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| Claim Language  |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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|   |  | Reference   |   | Reference  |  |
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| controlling at least one of a plurality of receiver stations                  | generated in the television studio originating the programming and is transmitted in the programming transmission.   |   |   | original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.  |  |
| each of said plurality of receiver stations                                   | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. | Column 17 lines 47-53.                                | <p>Page 25 line 34 to page 26 line 1.</p> <p>Page 90 lines 4-7. Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11.</p> <p>Page 390 lines 30-35.</p> | <p>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.</p> <p>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ...</p> <p>Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.</p> <p>Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.</p> |  |
| including one of a broadcast signal receiver and a cablecast signal receiver, | A signal processor apparatus for simultaneous use with a cablecast input that conveys both television and radio programming and a broadcast television input is shown in Figure 1. As shown, the input signals are the entire range of frequencies or channels transmitted on the  | Column 6 lines 23-30.                                 | <p>Page 396 lines 8-10.</p> <p>Page 29 lines 4-15.</p>  | <p>Fig. 2 shows one embodiment of a signal processor. Said processor, 26, is configured for simultaneous use with a cablecast input that conveys both television and radio programming and a broadcast television input. ... The inputted information is the entire range of frequencies or channels transmitted on the</p>  |  |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language  | Support to instant specification.<br>Reference                      | Language   |
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| at least one processor,  | Column 19 lines 63-64.   | <p>cable and the entire range of broadcast television transmissions available to a local television antenna of conventional design.</p> <p>This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.</p>  | <p>Page 26 lines 1-2.</p> <p>Page 37 line 26 to page 38 line 8.</p> | <p>cable and the entire range of broadcast television transmissions available to a local television antenna of conventional design.</p> <p>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p>  |
| at least one stored subscriber datum with independent receiver specific relevance, | Column 19 lines 35-41.   | <p>Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day. It may receive these directly or it may automatically query a data service for them in a predetermined fashion. It records those prices that relate to the stocks in its stored portfolio.</p> | Page 449 lines 13-35.   | <p>Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. (Said remote station transmits said closing stock price data and causes specific subscriber stations to select and process their specific information of interest in the fashion in which remote news-service-A station transmitted the AT&amp;T news item and caused selected stations to select and process, in their specific fashions, the information of said item.) Alternatively, microcomputer, 205, is caused in a predetermined fashion (for example, by a SPAM message a given transmission monitored by signal processor, 200, in any of the above described fashions) automatically to telephone a remote data service computer, by</p> |

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| Reference   | Reference  | Reference   | Reference   |
| and a signal detector, wherein said signal detector is adapted to receive signals from one of a broadcast signal and a cablecast signal, and wherein said at least one processor is programmed to | Column 6 lines 50-53.                              | These separate detectors are designed to act on the particular frequency ranges in which the encoded information may be found.<br><br>See Figure 1.   | means of network, 262, in a fashion well known in the art, and to cause said remote computer to select and transmit the particular closing price datum or data of the stock or stocks of the portfolio of said microcomputer, 205, thereby causing said microcomputer, 205, to record said datum or data in a predetermined fashion.<br><br>The apparatus of these separate paths are designed to act on the particular frequency ranges in which embedded signal information may be found.<br><br>See Figure 2.  |
| respond to signals from said signal detector, said method comprising the steps of:  | Column 8 lines 20-25.<br><br>Column 7 lines 50-58. | The signal processor apparatus also has a controller device which includes programmable random access memory controller 20, read only memory 21 that may contain a unique digital code capable of identifying the signal processing apparatus uniquely, an automatic dialing device 24, and a telephone unit, 22.<br><br>Processor or monitor, 12, analyzes, in a pre-determined fashion, the signal words and units that it receives and determines whether they are to be passed to external equipment or to buffer/comparator, 14, for further processing or both. If a signal or signals are to be passed externally, processor unit, 12, identifies, in a pre-determined fashion, the external equipment to which the signal or signals are addressed and passes them to appropriate jack ports for external transmission. | Signal processor, 26, has a controller device which includes programmable RAM controller, 20; ROM, 21, that may contain unique digital code information capable of identifying signal processor, 26, and the subscriber station of said processor, 26, uniquely; an automatic dialing device 24; and a telephone unit, 22.<br><br>Controller, 12, receives the signals inputted from buffer/comparator, 8, and decryptor, 10; analyzes said signals in a predetermined fashion; and determines whether they are to be transferred to external equipment or to buffer/comparator, 14, or both. If a signal or signals are to be transferred externally, in a predetermined fashion controller, 12, identifies the external apparatus to which the signal or signals are addressed and transfers them to the appropriate port or ports for external transmission. |



| Claim Language   |   | Support to parent application filed November 3, 1981.   |  | Support to instant specification.   |  |
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| (1) receiving at one of a broadcast transmitter station and a cablecast transmitter station at least one instruct signal which is effective at said at least one of said plurality of receiver stations to | Column 10 lines 30-39.                  | The facility receives programming from many sources. Transmissions may be received from satellites by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions can be received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions can be received by antenna, 60, and TV demodulator, 61. Other electronic programming input means, 62, can receive programming transmissions. |  | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. |  |
| select said at least one subscriber datum for at   | Column 19 lines 64-66.                  | This signal instructs microcomputer, 205, to transmit the <b>first</b> overlay to TV set, 202,...   |  | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |  |
| least one of simultaneous presentation and   | Column 18 lines 43-45.                  | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion.  |  | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.   |  |
|  | Column 19 lines 67 to column 20 line 2. | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.   |  | And the Fig. 1C combining is displayed.   |  |
|  | Column 19 lines 59-60.                  | Then the host says, "And here is what your portfolio did."  |  | TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.   |  |
| sequential presentation with mass medium programming;  |   |   |  | Then the host says, "And here is what your portfolio did."  |  |

| Claim Language   |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.         |   |
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|  |  | Reference   | Language  | Reference                                 | Language  |
|  |  | Column 19 line 67 to column 20 line 1.                | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...   | Page 26 lines 8-11.                       | TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...   |
| (2) transferring said at least one instruct signal from said one of said broadcast transmitter station and said cablecast transmitter station to a transmitter;          |  | Column 10 lines 40-47.                                | All of these received transmissions feed into the facility by hard-wire and connect, by means of conventional switches (here matrix switch, 75), to one or more video recorder/players, 76 and 78, and/or to equipment that outputs them over various channels to the cable system's field distribution system, 93, which equipment includes here cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.  | Page 324 line 31 to page 325 line 4.      | Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire, a conventional matrix switch, 75, well known in the art, one or more recorder/players, 76 and 78, apparatus that outputs said transmissions over various channels to the cable system's field distribution system, 93, which apparatus includes cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.  |
| (3) receiving at least one control signal at said one of said broadcast transmitter station and said cablecast transmitter station, wherein said at least control signal |  | Column 10 lines 30-39.                                | The facility receives programming from many sources. Transmissions may be received from satellites by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions can be received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions can be received by antenna, 60, and TV demodulator, 61. Other electronic programming input means, 62, can receive programming transmissions. | Page 324 lines 23-31.                     | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. |
|  |  | Column 4 lines 5-6.                                   | These techniques employ signals embedded in programs.   | Page 13 lines 25-26.                      | The present invention employs signals embedded in programming.  |
| identifies at least one specific receiver station device to which said at least one instruct signal is addressed; and  |  | <i>In General</i><br>Column 17 lines 39- 44.          | Signal processor apparatus have the ability to identify instruction and information signals in one or more inputted television and radio programming transmissions, identify and discriminate among one or more pieces of external equipment to which such signals are addressed, and transfer such signals to  | <i>In General</i><br>Page 15 lines 16-23. | The frequencies may convey television, radio, or other programming transmissions....The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information; ...   |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference                       | Language  | Support to instant specification.<br>Reference  | Language  |
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|  | <p>such equipment as directed.</p> <p><i>Specifically</i><br/>Column 19 lines 63-64.</p> | <p>This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.</p>  | <p>Page 34 lines 24-26.</p> <p>Page 44 lines 14-15.</p> <p>Page 95 lines 18-21.</p> <p><i>Specifically</i><br/>Page 26 lines 1-2.</p> <p>Page 37 line 26 to page 38 line 8.</p> | <p>... identifies the particular apparatus to which said signals are addressed, and outputs said signals to said apparatus ...</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that ...</p> <p>Receiving the header and execution segment of said first message causes controller, 39, to determine that said message is addressed to URS microcomputers, 205, and to transfer said message to microcomputer, 205.</p> <p>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> |
| <p>(4) transferring said at least one control signal from said one of said broadcast transmitter station and said cablecast transmitter station to said transmitter, said one of said broadcast transmitter station and said cablecast transmitter station one</p> | <p>Column 10 lines 40-47.</p>  | <p>All of these received transmissions feed into the facility by hard-wire and connect, by means of conventional switches (here matrix switch, 75), to one or more video recorder/players, 76 and 78, and/or to equipment that outputs them over various channels to the cable system's field distribution system, 93, which equipment includes here cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.</p> | <p>Page 324 line 31 to page 325 line 4.</p>   | <p>Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire, a conventional matrix switch, 75, well known in the art, one or more recorder/players, 76 and 78, apparatus that outputs said transmissions over various channels to the cable system's field distribution system, 93, which apparatus includes cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.</p>   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.   |          |
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|   |                        | Reference   | Language   | Reference   | Language |
| of<br>broadcasting and<br>cablecasting  | Column 10 lines 15-20. | The signal processing apparatus outlined in FIGS. 1, A, 2B, and 2C, and their variants as appropriate, can be used to automate the operations of an intermediate transmission point whether it be a broadcast station transmitting only a single channel of programming or a cable system cablecasting many channels. | Page 324 lines 8-17.   | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of intermediate transmission stations that receive and retransmit programming. The stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and may range in scale of operation from wireless broadcast stations that transmit a single programming transmission to cable systems that cablecast many channels simultaneously. |          |
| said at least one instruct<br>signal and said   | Column 19 lines 64-66. | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...  | Page 26 lines 1-8.   | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |          |
| at least one control<br>signal to said at least<br>one of said plurality of<br>receiver stations. | Column 19 lines 63-64. | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.   | Page 26 lines 1-2.<br><br>Page 37 line 26 to page 38 line 8. | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.                                      |          |

| Claim Language  |   | Support to parent application filed November 3, 1981.   |  | Support to instant specification.   |          |
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|   |   | Reference   | Language   | Reference   | Language |
| 28. The method of claim 27, wherein at least one of said at least one instruct signal and said at least one control signal is embedded in the non-visible portion of a television signal. | <p>Column 20 lines 27-29.</p> <p>Column 4 lines 5-6.</p> <p>Column 4 lines 18-22.</p> | <p>... a signal is identified in the incoming programming on TV set, <b>202</b>, by decoder, <b>203</b>, ...</p> <p>These techniques employ signals embedded in programs.</p> <p>In television they may appear on one line in the video portion of the transmission, or on a portion of one line, or on more than one line, and will probably lie outside the range of the television picture displayed on a normally tuned television set.</p> | <p>Page 471 line 35 to page 472 line 1.</p> <p>Page 13 lines 25-26.</p> <p>Page 14 lines 6-11.</p> | <p>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ...</p> <p>The present invention employs signals embedded in programming.</p> <p>In television they may appear on one line in the video portion of the transmission such as line 20 of the vertical interval, or on a portion of one line, or on more than one line, and they will probably lie outside the range of the television picture displayed on a normally tuned television set.</p>  |          |
| 29. The method of claim 27, wherein said at least one control signal identifies   | Column 11 lines 3-14.   | <p>Signal processor, <b>71</b>, has means, described above, to identify and separate the instruction and information signals from their associated programming and pass them, along with information identifying the channel source of each signal, externally to code reader, <b>72</b>. ...</p> <p>Code reader, <b>72</b>, passes the received signals, with channel identifiers, to cable program controller and computer, <b>73</b>.</p>    | <p>Page 325 line 34 to page 326 line 11.</p> <p>Page 326 lines 16-18.</p>                          | <p>At signal processor system, <b>71</b>, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or <b>70</b>, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or <b>70</b>; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station, automatically adds, in a predetermined fashion source mark information that identifies said associated distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or <b>70</b>; and transfers said selected messages, with said source mark information, to code reader, <b>72</b>.</p> <p>Code reader, <b>72</b>, buffers and passes the</p> |          |

| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.                            |  |
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|   | Reference   | Language   | Reference  | Language   |
| two of said plurality of receiver stations  | Column 19 lines 63-64.                                | This signal is identified by decoder, <b>203</b> , and transferred via processor, <b>204</b> , to microcomputer, <b>205</b> .  | Page 26 lines 1-2.<br><br>Page 37 line 26 to page 38 line 8. | received SPAM message information, with source mark information, to cable program controller and computer, 73.<br><br>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
| asynchronously and each of said identified two of said plurality of receiver stations | Column 10 lines 15-20.                                | The signal processing apparatus outlined in FIGS. 1, A, <b>2B</b> , and <b>2C</b> , and their variants as appropriate, can be used to automate the operations of an intermediate transmission point whether it be a broadcast station transmitting only a single channel of programming or a cable system cablecasting many channels.                    | Page 324 lines 8-17.   | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of intermediate transmission stations that receive and retransmit programming. The stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and may range in scale of operation from wireless broadcast stations that transmit a single programming transmission to cable systems that cablecast many channels simultaneously.  |
|   | Column 17 lines 47-53.                                | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. <b>6F</b> and <b>6G</b> is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. | Page 390 lines 30-35.  | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.   |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language   | Support to instant specification.<br>Reference                           | Language   |
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| receives and responds to said at least one instruct signal | Column 11 lines 3-14.  | <p>Signal processor, 71, has means, described above, to identify and separate the instruction and information signals from their associated programming and pass them, along with information identifying the channel source of each signal, externally to code reader, 72. ...</p> <p>Code reader, 72, passes the received signals, with channel identifiers, to cable program controller and computer, 73.</p> | <p>Page 396 lines 8-10.</p> <p>Page 325 line 34 to page 326 line 11.</p> | <p>Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.</p> <p>At signal processor system, 71, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station, automatically adds, in a predetermined fashion source mark information that identifies said associated distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; and transfers said selected messages, with said source mark information, to code reader, 72.</p> <p>Code reader, 72, buffers and passes the received SPAM message information, with source mark information, to cable program controller and computer, 73.</p> <p>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> |

| Claim Language   |  | Support to parent application filed November 3, 1981. |  | Support to instant specification. |   |
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|  |  | Reference   | Language   | Reference                         | Language  |
| asynchronously.  |  | Column 10 lines 15-20.                                | The signal processing apparatus outlined in FIGS. 1, A, 2B, and 2C, and their variants as appropriate, can be used to automate the operations of an intermediate transmission point whether it be a broadcast station transmitting only a single channel of programming or a cable system cablecasting many channels.                      | Page 324 lines 8-17.              | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of intermediate transmission stations that receive and retransmit programming. The stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and may range in scale of operation from wireless broadcast stations that transmit a single programming transmission to cable systems that cablecast many channels simultaneously. |
|  |  | Column 17 lines 47-53.                                | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. | Page 390 lines 30-35.             | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.  |
|  |  |   |  | Page 396 lines 8-10.              | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.  |
| 30. The method of claim 27, wherein a switch communicates signals selectively from a first receiver and at least one of a memory and a recorder to |  |   | Matrix Switch, 75, in Fig. 3B.<br><br>TV receiver, 53, in Fig. 3A.<br>VTR, 78, in Fig. 3B.<br><br>Recorder and Player, 76, in Fig. 3B.   |                                   | Matrix Switch, 75, in Fig. 6A.<br><br>TV receiver, 53, in Fig. 6A.<br>78, in Fig. 6A.<br>recorder/players, 76 and 78<br>Recorder and Player, 76, in Fig. 6A.  |



| Claim Language  |                        | Support to parent application filed November 3, 1981.   | Support to instant specification.   |
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|   |                        | Reference   | Language  |
| a first transmitter, said method further comprising at least one of:          |                        |   | Cable Channel Modulator, 83, in Fig. 6B.  |
| detecting a first signal which is effective at a first transmitter station to | Column 11 lines 38-46. | By comparing identification signals on the incoming programming with the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming.<br>Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video recorder/players, 76 and 78. | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.<br><br>SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....<br><br>... monitor information that identifies what programming is available, ...<br><br>Meter-monitor segments contain meter information and/or monitor information.<br><br>Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ... |
|   |                        | Page 327 line 35 to page 328 line 13.   |   |
|   |                        | Page 84 lines 26-28.  |   |
|   |                        | Page 28 lines 26-27.  |   |
|   |                        | Page 49 lines 26-27.  |   |
|   |                        | Page 328 lines 14-16.   |   |

| Claim Language   |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.     |  |
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|  |                        | Language  |  | Language                              |  |
| instruct communication;  | Column 11 lines 54-57. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.   |  | Page 328 line 31 to page 329 line 1.  | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.   |
| determining a specific signal source from which to communicate a second signal to said first transmitter;        | Column 11 lines 50-54. | For example, if controller/computer, 73, determines that programing incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, ...   |  | Page 328 lines 22-31.                 | For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine ... that said "code" information matches ... schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87. |
| controlling said switch to communicate said second signal to said first transmitter                              | Column 11 lines 54-57. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.   |  | Page 328 line 31 to page 329 line 1.  | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.   |
| in response to said first signal which is effective at said first transmitter station to instruct communication; | Column 11 lines 38-46. | By comparing identification signals on the incoming programing with the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming.<br>Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video |  | Page 327 line 35 to page 328 line 13. | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor                     |

| Claim Language   |                        | Support to parent application filed November 3, 1981.   | Support to instant specification.    |  |
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|  |                        | Reference   | Language                             | Reference  |
|  |                        |   | recorder/players, 76 and 78.         | information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.<br><br>SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....<br><br>... monitor information that identifies what programming is available, ...<br><br>Meter-monitor segments contain meter information and/or monitor information.<br><br>Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ... |
| controlling said switch to communicate said second signal from | Column 11 lines 54-57. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. | Page 328 line 31 to page 329 line 1. | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.  |
| said specific signal source; and                               | Column 10 lines 49-52. | When played on video recorder and players, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted to the field.                                     | Page 325 lines 6-9.                  | When played on video recorders, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted via switch 75 to field distribution system, 93.   |
|  | Column 11 lines 60-61. | ... controller/computer, 73, selects a video recorder/player, 76 or 78, ...   | Page 329 lines 13-15.                | So determining causes computer, 73, ... to select a video recorder/player, 76 or 78; ...   |

| Claim Language   | Support to parent application filed November 3, 1981   | Support to instant specification  |
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| Reference  | Language   | Reference   |
| Reference  | Language   | Language  |
| controlling said switch to communicate to said at least one of said memory and said recorder               | Column 11 lines 61-64.<br><br>... in a predetermined fashion, to record the incoming programming, instructs matrix switch, 75, to transfer the programming to the designated recorder/player, 76 or 78, ...  | Page 329 lines 13-20.<br><br>... in its preprogrammed fashion, ... to ... record programming; and to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 67) from television receiver, 58, to the output that leads to said selected recorder, 76 or 78.  |
| a third signal which is effective at said at least one of said plurality of receiver stations to instruct. | Column 19 lines 60-66.<br><br>At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ... | Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
|  |  | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV   |
|  |  | Page 26 lines 4-8   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.   | Support to instant specification.     |   |
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|   |                        | Reference   | Language                              | Language  |
|   |                        |   |                                       | monitor, 202M.  |
| 31. The method of claim 27, wherein a controller controls a switch to communicate to a first transmitter a selected signal, | Column 11 lines 54-57. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.   | Page 328 line 31 to page 329 line 1.  | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.  |
| said method further comprising at least one of:   | Column 19 lines 43-44. | ... instruction signals embedded in the "Wall Street Week" programming transmission.  | Page 21 lines 23-24.                  | ... instruction signals embedded in the "Wall Street Week" programming transmission.  |
| detecting a first signal which is effective at a first transmitter station to   | Column 11 lines 38-46. | By comparing identification signals on the incoming programming with the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming.<br>Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video recorder/players, 76 and 78. | Page 327 line 35 to page 328 line 13. | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit. |
|   |                        |   | Page 84 lines 26-28.                  | SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in  |

| Claim Language         |  | Support to parent application filed November 3, 1981.   |  | Support to instant specification.  |   |
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|                        | Reference  | Language  | Reference  | Language   |   |
| instruct transmission; | Column 11 lines 50-57.   | ... if controller/computer, 73, determines that programming incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. | Page 28 lines 26-27.<br><br>Page 49 lines 26-27.<br><br>Page 328 lines 14-16.<br><br>Page 328 line 22 to page 329 line 1.  | television or radio or other programming transmissions....<br><br>... monitor information that identifies what programming is available, ...<br><br>Meter-monitor segments contain meter information and/or monitor information.<br><br>Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ...<br><br>For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular preprogrammed schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87. In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87. |   |
|                        | inputting to said controller a second signal which is effective to | Column 11 lines 32-39.  | By means of the signals, with channel indicators, received from code reader, 72, controller/computer, 73, can determine what specific programming and programming unit has been received by each receiver, 53 through 62, and is passing in line on each individual wire to matrix switch, 75.<br>By comparing identification signals on | Page 327 line 35 to page 328 line 13.  | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver. 53 through 62, |

| Claim Language       | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference   | Support to instant specification.<br>Language  |
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|                      |  | the incoming programming with the programming schedule ...  |   | <p>and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.</p> <p>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.</p> <p>SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....</p> <p>... monitor information that identifies what programming is available, ...</p> <p>Meter-monitor segments contain meter information and/or monitor information.</p> <p>For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular programmed schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87. In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to</p> |
| control said switch; | Column 11 lines 50-57.   | ... if controller/computer, 73, determines that programming incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. | <p>Page 84 lines 26-28.</p> <p>Page 28 lines 26-27.</p> <p>Page 49 lines 26-27.</p> <p>Page 328 line 22 to page 329 line 1.</p> |  |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.                                  |   |
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|  | Reference   | Language   | Reference  | Language  |
| controlling said switch to communicate at least one signal according to a transmission schedule; | Column 11 lines 44-46.                                | Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video recorder/players, 76 and 78.  |  | that output of matrix switch, 75, that outputs to modulator, 87.  |
|  | Column 11 lines 38-43.                                | By comparing identification signals on the incoming programming with the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming. | Page 328 lines 14-16.<br><br>Page 327 line 35 to page 328 line 13. | Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ....<br><br>Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit. |
|  |   |  | Page 84 lines 26-28.   | SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....   |
|  |   |  | Page 28 lines 26-27.   | ... monitor information that identifies what programming is available, ...  |
| controlling said switch to communicate   |   |  | Page 49 lines 26-27.   | Meter-monitor segments contain meter information and/or monitor information.  |
|  | Column 11 lines 50-54.                                | For example, if controller/computer, 73, determines that programming incoming via  | Page 328 lines 22-31.  | For example, computer, 73, receives a given SPAM message that contains given "program   |



| Claim Language   |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.    |  |
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|  |                        | Reference   | Language   | Reference                            | Language   |
| from a specific one of a plurality of signal sources; and  |                        |   | receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, ... |                                      | unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine ... that said "code" information matches ... schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87.   |
| controlling said switch to communicate a third signal to a selected one of   | Column 11 lines 54-57. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.                                       |  | Page 328 line 31 to page 329 line 1. | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.   |
| a plurality of transmitters.   | Column 10 lines 43-47. | ... and/or to equipment that outputs them over various channels to the cable system's field distribution system, 93, which equipment includes here cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92. |  | Page 325 lines 1-4.                  | ... apparatus that outputs said transmissions over various channels to the cable system's field distribution system, 93, which apparatus includes cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.   |
| 32. The method of claim 27, said method further comprising at least one of: transmitting to said at least one of said plurality of receiver stations | Column 12 lines 45-47. | Beyond channel combining system and multiplexer, 92, amplifier, 94, transmits programming to signal processor, 71, and signal processor, 96, ...  |  | Page 337 lines 1-8.                  | Fig. 6 shows particular signal processor system monitoring apparatus associated with the intermediate station of Fig. 6. In field distribution system, 93, amplifier, 94, inputs programming transmissions to signal processor system, 71, (where said transmissions are inputted to one alternate contact of the switch, 1, of the signal processor of said system, 71), and amplifier, 95, inputs programming transmissions to signal processor, 96, ... |
| at least one of data that:   | Column 3 lines 6-8.    | Examples of signal words are a string of  |  | Page 14 line 35 to page              | Examples of signal words are a string of one   |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.   |   |
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|  |   | one or more digital data bits encoded together on a single line of video or sequentially in audio.  | 15 line 2.  | or more digital data bits encoded together on a single line of video or sequentially in audio.  |
| (a) designate at least one of a time of transmission and a channel of transmission of said at least one instruct signal; and | Column 19 lines 8-9.<br><br>Column 19 lines 20-23.    | Microcomputer, 205, is preinformed of the time of cablecasting.<br><br>Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X. | Page 437 lines 1-3.<br><br>Page 267 lines 20-28 from example #5.<br><br>Page 435 lines 16-25. | <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, 20.</p> <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, of the station of Fig. 7 and 7C detects one instance of the Select-WSW-Program-Unit SPAM message of the station of Fig. 6 ...</p> <p>Receiving said Select-WSW-Program-Unit message causes the apparatus of said signal processor, 200, to input said message to the microcomputer, 205, of said station.</p> <p>Receiving said Select-WSW-Program-Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, and to cause said CPU to execute the information so inputted as a machine language job. The information so inputted is the aforementioned determine-whether-to-select instructions that contain said particular specific-WSW</p> |

| Claim Language                |  | Support to parent application filed November 3, 1981. |   | Support to instant specification. |   |
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|                               |  | Reference   | Language  | Reference                         | Language  |
|                               |  |   |   |                                   | <p>information and said please-fully-enable-WSW-on-CC13-at-particular-8:30 information.</p> <p>Executing said determine-whether-to-select instructions causes microcomputer, 205, to...</p> <p>Said instructions contain one instance, and ...</p> <p>program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i></p> <p>Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>...to receive the transmission of cable channel 13;...</p> |
| (b) specify one of a title of |  | Column 19 lines 5-8.                                  | In another example, microcomputer, 205 may be preinformed that a certain television program, hypothetically "Wall Street Week," should be televised on TV set, 202, when it is cablecast. | Page 428 lines 21-26.             | The program-unit-of-interest information preprogrammed at the microcomputer, 205, of the station of Figs. 7 and 7C includes particular specific-WSW information that reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.  |
| and a subject matter          |  | Column 18 lines 52-55.                                | The news services precede each news   | Page 420 line 32 to               | Each remote station transmits each particular   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.                                  |   |
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| contained in one of said mass medium programming and said data associated with said at least one instruct signal; and |                        |   | transmission with a unique signal that uniquely identifies the company or companies to which the news item refers and/or the industries. | page 421 line 17.  | news item within the particular format of a Transmit-News-Item SPAM message, and receiving any given message in a Transmit-News-Item SPAM message ...<br>In due course, said remote news-service-A station transmits a particular AT&T news item in a particular Transmit-AT&T-News-Item message that is in said Transmit-News-Item SPAM message format and that consists of ... the "program unit identification code" information of said AT&T news item and subject matter information of said binary information of "T", appropriate padding bits, an information segment that contains said AT&T news item, and an end of file signal. |
| transmitting to said at least one of said plurality of receiver stations  | Column 12 lines 45-47. | Beyond channel combining system and multiplexer, 92, amplifier, 94, transmits programming to signal processor, 71, and signal processor, 96, ...  |  | Page 337 lines 1-8.  | Fig. 6 shows particular signal processor system monitoring apparatus associated with the intermediate station of Fig. 6. In field distribution system, 93, amplifier, 94, inputs programming transmissions to signal processor system, 71, (where said transmissions are inputted to one alternate contact of the switch, 1, of the signal processor of said system, 71), and amplifier, 95, inputs programming transmissions to signal processor, 96, ...  |
| a first control signal to cause said at least one of said plurality of receiver stations                              | Column 19 lines 17-23. | ... processor or monitor, 12, which reacts, in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X. |  | Page 435 lines 16-18.<br><br>Page 267 lines 20-28 from example #5. | In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...<br><br>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands   |

| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language  | Support to instant specification.<br>Reference   | Language   |
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| to tune        | Column 19 lines 23-25.   | ... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X ... | <p>Page 436 line 9 to page 437 line 3.</p> <p>Page 439 lines 14-15.</p> <p>Page 437 lines 1-6.</p> | <p>are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>Receiving said Select-WSW-Program- Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW information and said ... enable-WSW-on-CC13...</p> <p>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW -on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>... to receive the transmission of cable channel 13; ...</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>Receiving said please-fully-enable-WSW-on-CC13-at- particular-8:30</p> |

| Claim Language   |  | Support to parent application filed November 3, 1981. | Support to instant specification.   |                                    |
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|  |  | Reference   | Language  | Reference                          |
| to one of a broadcast transmission and a cablecast transmission containing a specific instruct signal. |  |   | information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ...  |                                    |
|  |  |   | ... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13; ...   | Page 439 lines 9-15.               |
|  |  |   | Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its...                                       | Page 295 lines 6-8.                |
|  |  |   | ...to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13; ...  | Page 439 lines 9-15.               |
|  |  |   | The inputted information is the entire range of frequencies or channels transmitted on the cable and the entire range of broadcast television transmissions available to a local television antenna of conventional design. | Page 29 lines 11-15.               |
| 33. The method of claim 27, wherein said at least one control signal includes downloadable code        |  | Column 6 lines 26-30.                                 | ... instruction signals embedded in the "Wall Street Week" programming transmission.  | Page 21 lines 23-24.               |
|  |  |   | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...   | Page 451 lines 6-7.                |
|  |  |   | several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205.  | Page 23 line 35 to page 24 line 4. |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language  | Support to instant specification.<br>Reference  | Language   |
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| targeted to said at least one processor at said at least one of said plurality of receiver stations, | Column 19 lines 46-48.   | <p>These signals instruct microcomputer, 205, ...</p> <p>... several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205.</p>                                       | <p>Page 37 line 26 to page 38 line 8.</p> <p>Page 24 lines 5-6.</p> <p>Page 23 line 35 to page 24 line 4.</p> <p>Page 37 line 26 to page 38 line 8</p> <p>Page 23 line 35 to page 24 line 16.</p> | <p>signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to</p> |
| said downloadable code programming a way   | Column 19 lines 46-53.   | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct |   |  |

| Claim Language                       | Support to parent application filed November 3, 1981.<br>Reference | Language                              | Support to instant specification.<br>Reference   | Language   |
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| in which said at least one processor | Column 19 lines 48-53.   | microcomputer, 205, ... upon command. | Page 44 lines 14-17.<br><br>Page 26 lines 20-28. | <p>microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synchron command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synchron command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)</p> <p>Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...</p> <p>... the program instruction set in the first</p> |
|                                      | These signals instruct microcomputer, 205, ...                     | ...                                   | Page 24 lines 5-16.<br><br>Page 451 lines 7-11.  |  |
|                                      | ...  | ...                                   |  |  |
|                                      | ...  | ...                                   |  |  |



| Claim Language                                 |                        | Support to parent application filed November 3, 1981.                                      |   | Support to instant specification.   |  |
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|  |                        | Reference  | Language  | Reference   | Language   |
|  |                        |  | overlays, ...<br><br>... which microcomputer, 205, has the means to generate and transmit and TV set, 202, has the means to receive and display, and to ... | Page 19 line 29 to page 20 line 20.   | message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.<br><br>Microcomputer, 205, is a conventional microcomputer system ... for generating computer graphic information; for receiving a composite video transmission; for combining said graphic information onto the video information of said transmission by graphic overlay techniques, well known in the art; and for outputting the resulting combined information to a TV monitor, 202M, in a composite video transmission. ... TV monitor, 202M, has capacity for receiving composite video and audio transmissions and for presenting a conventional television video image and audio sound. |
|  |                        |  | ... transmit these overlays to TV set, 202,...  | Page 26 lines 4-8.  | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |
| responds to said at least one instruct signal. | Column 19 lines 64-66. | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,... | Page 26 lines 1-8.  | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. |  |
| 34. The method of claim 27, wherein said       | Column 9 lines 47-57.  | The controller, 20, is programed to sequence the local oscillator, 6, to select            | Page 248 line 17 to page 249 line 5.  | Signal processor, 200, is preprogrammed with information that identifies each cable and   |  |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference  | Language  | Support to instant specification.<br>Reference | Language  |
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| at least one of said plurality of receiver stations is one of adapted to detect the presence of said at least one control signal |   | each desired frequency for a specific time interval in accordance with a predetermined pattern. This pattern may be selected in accordance with standard broadcast and cablecast practices known to exist on that transmission line or frequency. | Page 257 line 24 to page 258 line 19.          | over-the-air (hereinafter, "wireless") transmission or frequency in the locality of the subscriber station of Fig. 3 as well as the standard broadcast and cablecast practices that apply on said transmissions and frequencies ... In a predetermined fashion, controller, 20, controls oscillator, 6, to sequence local oscillator, 6, in the pattern: cable channel 2, cable channel 4, cable channel 7, cable channel 13, wireless channel 5, wireless channel 9, wireless channel 13, then to repeat said pattern.<br><br>Said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 9. Automatically oscillator, 6, causes mixer, 3, to select the frequency of channel 9 and input said frequency of interest, at a fixed frequency, to decoder, 30 ...<br>Controller, 20, has capacity for keeping in track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13. |
|  | The local oscillator, being thus sequenced, will allow each signal decoder, 30 and 40, to receive a particular frequency at a particular time interval. |   | Page 257 line 24 to page 258 line 19.          | Said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 9. Automatically oscillator, 6, causes mixer, 3, to select the frequency of channel 9 and input said frequency of interest, at a fixed frequency, to decoder, 30 ...<br>Controller, 20, has capacity for keeping  |

| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference  | Support to instant specification.<br>Language  |
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|                |  | <p>This will define the timing of the composite outputs of the digital detectors, 34, 37, and 38 in FIG. 2A, and 43 in FIG. 2B.</p> | <p>Page 265 line 27 to<br/>Page 266 line 21.</p> | <p>track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13.</p> <p>Said radio-detection-complete information causes ... controller, 20, to cause oscillator, 6, to cause the selection of the next frequency in the predetermined radio frequency selection pattern: 99.0 MHz. Automatically oscillator, 6, causes mixer, 2, to select said frequency and input it, at a fixed frequency, to decoder, 40 ...</p> <p>After determining, in a predetermined fashion, that a particular predetermined period of time has elapsed from the input of said 99.0 MHz frequency to decoder, 40, controller, 20, ... causes oscillator, 6, to cause the selection of the next frequency in the predetermined radio frequency selection pattern: 100.0 MHz.</p> <p>Example #5 begins with the embedding and transmitting, at the remote station that originates the "Wall Street Week" broadcast, of the first message of the "Wall Street Week" program which is the message of the first combining synch command.</p> <p>Receiving said embedded information causes the binary SPAM information of said first command, with error correcting information, to be detected at detector, 34; ...</p> <p>... said information to radio decoder, 42, which decodes the the embedded signal information of said command and transmits said signal information to digital detector, 43, which detects the binary information with</p> |
|                |  |   | <p>Page 250 lines 13-17.</p>                     |  |
|                |  |   | <p>Page 251 lines 8-11.</p>                      |  |
|                |  |   | <p>Page 263 lines 19-24.</p>                     |  |

| Claim Language  |  | Support to parent application filed November 3, 1981. | Support to instant specification. |  |
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| <p>and programmed to respond to said at least one instruct signal on the basis of a location of a first signal in an information transmission, said method further comprising the step of:</p> <p><u>ONE OF</u></p> <p>causing at least</p> |  | Column 19 lines 42-44.                                |                                   | <p>error correcting bit information of said command and transfers said binary and bit information to controller, 44.</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46.</p> <p>Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.</p>   |
|   |  | Column 19 lines 60-63.                                |                                   | <p>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.</p> <p>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.</p> <p>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ...</p> |
|   |  |   |                                   | <p>Page 37 lines 26-28.</p> <p>Page 21 lines 20-24.</p>  |
|   |  |   |                                   | <p>Page 59 lines 29-33.</p> <p>Page 25 line 34 to page 26 line 1.</p> <p>Page 90 lines 4-7.</p> <p>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-</p>  |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference   | Support to instant specification.<br>Language  |
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| <u>OR</u><br>causing at least                            | Column 11 lines 50-57.   | ... if controller/computer, 73, determines that programing incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. | 6, and page 90 lines 4-11.<br><br>Page 328 line 22 to page 329 line 1.                    | For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular programmed schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87. In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87. |
| a portion of one of said at least one control signal and | Column 19 lines 43-49.   | ... instruction signals embedded in the "Wall Street Week" programming transmission.<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205.   | Page 21 lines 23-24.<br><br>Page 451 lines 6-7.<br><br>Page 23 line 35 to page 24 line 4. | ... instruction signals embedded in the "Wall Street Week" programming transmission.<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...<br><br>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.  |
|  |  |  | Page 37 line 26 to page   | In each decoder, the controller, 39, 44, or  |

| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Language   | Support to instant specification.<br>Reference  | Language  |
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| said at least one instruct signal to be transmitted in said location of said first signal in said information transmission. | Column 19 lines 63-66.   | <p>These signals instruct microcomputer, 205, ...</p> <p>This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,</p> | <p>38 line 8.</p> <p>Page 24 lines 5-6.</p> <p>Page 26 lines 1-8.</p> <p>Page 37 line 26 to page 38 line 8.</p> | <p>47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...</p> <p>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to correct errors ... by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus ...</p> |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification. |   |
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| 35. A method for mass medium programming promotion and information delivery for use with | Column 20 lines 19-23.                                | Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input."  | Page 471 lines 6-13.              | Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#". |
|  | Column 20 lines 37-39.                                | The signal transmission from processor, 204, also passes a signal word to signal processor, 200, ...   | Page 477 lines 8-23.              | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating                   |
|  |   |  | Page 281 lines 1-6.               | By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control</b> .")   |
| an interactive television viewing apparatus capable of                                   | Column 17 lines 47-53.                                | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. | Page 390 lines 30-35.             | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.  |

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| storing at least one subscriber datum with independent interactive television viewing apparatus specific relevance, said method comprising the steps of: | Column 7 lines 50-54.  | Processor or monitor, 12, analyzes, in a pre-determined fashion, the signal words and units that it receives and determines whether they are to be passed to external equipment or to buffer/comparator, 14, for further processing or both. | Page 396 lines 8-10.<br><br>Page 31 lines 10-14. | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.<br><br>Controller, 12, receives the signals inputted from buffer/comparator, 8, and decryptor, 10; analyzes said signals in a predetermined fashion; and determines whether they are to be transferred to external equipment or to buffer/comparator, 14, or both.  |          |
|  | Column 20 lines 37-42. | The signal transmission from processor, 204, also passes a signal word to signal processor, 200,   | Page 477 lines 8-23.<br><br>Page 281 lines 1-6.  | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular covert control information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...<br><br>By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called "covert control.")<br><br>... the information of said segments is encrypted prior to transmission ...<br>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any |          |
|  |                        | which, in a predetermined fashion, signal processor, 200, decrypts and transfers   | Page 282 line 2 to page 283 line 33.             |  |          |



| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification. |  |
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| outputting television programming that promotes mass medium programming, said interactive television viewing apparatus having an | Column 20 lines 16-23.                                | to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.   | Page 478 lines 1-5.               | controlled functions that are invoked by the unencrypted execution segment of said message. ...<br>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".                 |
|  |   | Suppose a viewer watches a television program on cooking techniques that is received on TV set, 202, via box, 201. Julia Childs's "The French Chef" is one such program. Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input." |                                   | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above—for example, in the method of the first message of example #4.)  |
|  |   |  |                                   | ... transmits the programming transmission of a particular conventional television program on cooking techniques that is called "Exotic Meals of India."   |
|  |   |  |                                   | At the station of Fig. 7 and 7F (which station is a subscriber station of the intermediate station of Fig. 6), in the fashions described above, apparatus is caused to receive the particular transmission of said program that is retransmitted by the intermediate station of Fig. 6; ...  |
|  |   |  |                                   | ... to display the television information of said transmission (that is, information of said audio and video) at monitor, 202M.  |
|  |   |  | Page 470 lines 19-21.             | Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information |
|  |   |  | Page 471 lines 6-13.              |  |

| Claim Language  |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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| input device to receive input from a subscriber;  |  | Column 20 lines 23-26.                                | The viewer then presses buttons 567 on local input, 225, which signal is conveyed to the buffer/comparator, 8 (referring to Fig. 1), of signal processor, 200, ...  | Page 471 lines 14-21.              | that appears on the screen of each subscriber is "TV567#".<br><br>Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ...--enters TV567#, in a fashion well known in the art, at the keyboard of the specific local input, 225, of his own station which causes said input, 225, to transmit a particular preprogrammed process-local-input instruction and said TV567# information to the controller, 20, of the signal processor, 200, of said station. |
| prompting said subscriber during said television programming whether said subscriber wants said mass medium programming promoted in said step of displaying, said interactive television viewing apparatus having |  | Column 20 lines 19-23.                                | Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input." | Page 471 lines 6-13.               | Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#".  |
| a memory for storing at least one of a code and   |  | Column 8 lines 4-7.                                   | Upon determining in a predetermined fashion that a signal word or unit should be passed, buffer/comparator, 14, transmits the combined information to a digital recorder, 16.   | Page 31 line 30 to page 32 line 1. | Buffer/comparator, 14, receives signal information that is meter information and/or monitor information from controller, 12, and from other inputs; organizes said received information into meter records and/or monitor records (called, in aggregate, hereinafter, "signal records") in a predetermined fashion or fashions; and transmits said signal records to a digital recorder, 16, ...   |
|   |  | Column 2 lines 63-66.                                 | (The term "signal unit" hereinafter means one complete signal instruction or information message unit. Examples of signal units are a unique code identifying a programming unit, or a ...  | Page 14 lines 27-29.               | (The term "signal unit" hereinafter means one complete signal instruction or information message unit. Examples of signal units are a unique code identifying a programming unit, or a ...   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  | Support to instant specification.  |  |
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| a datum;  | Column 3 lines 3-8.    | programming unit, or a ...<br>The term "signal word" hereinafter means one full discrete appearance of a signal as embedded at one time in one location on a transmission. Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   | Page 14 line 32 to page 15 line 2. | The term "signal word" hereinafter means one full discrete appearance of a signal as embedded at one time in one location on a transmission. Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   |
| receiving a reply from said subscriber at said input device in response to said step of prompting said subscriber, said interactive television viewing apparatus having a processor for | Column 20 lines 19-26. | Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input." The viewer then presses buttons 567 on local input, 225, which signal is conveyed to the buffer/comparator, 8 (referring to Fig. 1), of signal processor, 200, to hold and process further ... | Page 471 lines 6-25.               | Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#". Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ... --enters TV567#, in a fashion well known in the art, at the keyboard of the specific local input, 225, of his own station which causes said input, 225, to transmit a particular preprogrammed process-local-input instruction and said TV567# information to the controller, 20, of the signal processor, 200, of said station.<br>Receiving said instruction and information causes the controller, 20, at each station where TV567# is entered, in a predetermined fashion, to retain said TV567# information at particular last-local-input-# memory. |
| processing said subscriber reply;   | Column 20 lines 26-27. | ... to hold and process further in a predetermined fashion.  | Page 471 lines 22-25.              | Receiving said instruction and information causes the controller, 20, at each station where TV567# is entered, in a predetermined fashion, to retain said TV567# information at particular last-local-input-# memory.  |
| processing said reply   | Column 20 lines 31-33. | ... that, if 567 has been received from  | Page 472 lines 15-17.              | ... and executing said instructions causes   |

| Claim Language   |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.                |  |
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| from said step of receiving said reply and   |  | Column 20 lines 23-26.                                | signal generator, 225, signal processor, 200, should, in a predetermined fashion, ...<br><br>The viewer then presses buttons 567 on local input, 225, which signal is conveyed to the buffer/comparator, 8 (referring to Fig. 1), of signal processor, 200, ...               | Page 471 lines 14-21.                            | controller, 20, to determine that TV567# information exists at said last-local-input-# memory ...<br><br>Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ...--enters TV567#, in a fashion well known in the art, at the keyboard of the specific local input, 225, of his own station which causes said input, 225, to transmit a particular preprogrammed process-local-input instruction and said TV567# information to the controller, 20, of the signal processor, 200, of said station.  |
| selecting at least a portion of said at least one of a code and a datum designating said mass medium programming, said interactive television viewing apparatus having |  | Column 20 lines 49-54.                                | Other signal decoder, 227, identifies a signal in the transmission received by printer, 221, which it passes via processor, 228, and buffer/comparator, 14, of signal processor, 200, to data recorder, 16. This signal indicates that the recipe, itself, has been received. | Page 473 line 29 to page 474 line 1              | Receiving said message causes the controller, 39, of decoder, 203, to load and execute said <b>generate-recipe</b> ... instructions at microcomputer, 205, and to transfer particular meter-monitor information to the buffer/comparator, 14, of signal processor, 200, causing said buffer/comparator, 14, to increment the information of said signal record of meter information in the fashion described above.  |
| a transmitter for communicating information to a remote site;  |  | Column 20 lines 54-56.                                | ... when signal processor, 200, transfers the data in its data recorder, 16, via telephone to a remote site, ...  | Page 314 line 30-33.<br><br>Page 28 lines 25-35. | At printer, 221, is other decoder, 227. At other output system, 261, is other decoder, 286. Each decoder is likely to be located physically inside the unit of its associated intermediate or output apparatus.<br><br>[Signal processor 200 in Fig.7] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring said meter records automatically to one or more remote automated billing stations that account for |

| Claim Language  | Support to parent application filed November 3, 1981.                                  |   | Support to instant specification.   |  |
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| communicating said selected at least a portion of a code and a datum to said remote site, said interactive mass medium output apparatus and said remote site comprising a | Column 8 lines 46-50.  | The controller, 20, also inputs the digital recorder, 16, to direct it to output the information from the memory of the recorder, 16, to telephone connection, 22, and thence to the collection site at the remote geographical location. | Page 33 lines 18-20.<br><br>Page 273 lines 4-6.<br><br>Page 273 lines 21-25.          | programming and information consumption and bill subscribers and said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage.<br><br>Controller, 20, has capacity for controlling the operation of all elements of the signal processor ...<br><br>The first stage of said sequence involves transferring audit information to a particular first host computer at a first remote station.<br><br>... causes controller, 20, to cause recorder, 16, to transmit all recorded meter audit records and particular other audit information to telephone connection, 22, which causes said connection, 22, to transmit said records and information to said first computer.<br><br>Controller, 20, transfers the telephone number, 1-800-AUDITOR, to auto dialer, 24, and causes said dialer, 24, to dial said number. Said first computer answers said telephone call, and in a fashion well known in the art, controller, 20, and said first computer automatically establish telephone communications. Automatically, controller, 20, causes telephone connection, 22, to transfer particular identifying information that includes the unique digital identifying code of ROM, 21, to said first computer followed by a particular instruct-to- receive signal. Said instruct-to-receive signal causes said first computer automatically to prepare to receive audit records then to transfer a particular start signal via connection, 22, to controller, 20. |
| network having a plurality of transmitter stations;   | Column 9 lines 21-22.<br><br>See "Telephone or other data transfer network" in Fig. 1. | [The controller, 20] is interactive with external sources via telephone connection, 22, ...   | Page 273 lines 6-19.<br><br>See "Telephone or other data transfer network" in Fig. 2. | Controller, 20, transfers the telephone number, 1-800-AUDITOR, to auto dialer, 24, and causes said dialer, 24, to dial said number. Said first computer answers said telephone call, and in a fashion well known in the art, controller, 20, and said first computer automatically establish telephone communications. Automatically, controller, 20, causes telephone connection, 22, to transfer particular identifying information that includes the unique digital identifying code of ROM, 21, to said first computer followed by a particular instruct-to- receive signal. Said instruct-to-receive signal causes said first computer automatically to prepare to receive audit records then to transfer a particular start signal via connection, 22, to controller, 20.  |
| organizing, in said network, at least   | Column 7 lines 36-37.  | Buffer/comparator, 8, organizes the data stream that it receives according to a pre-  | Page 30 lines 7-9.  | Buffer/comparator, 8, receives said signals from said decoders and other signals from  |

| Claim Language  |  | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |
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| a first signal which is effective at said interactive television viewing apparatus to |  |   | determined fashion ...   | Page 36 line 32 to page 37 line 3. | other inputs and organizes the received information in a predetermined fashion.<br><br>Each decoder is controlled by a controller, 39, 44, or 47, that has buffer, microprocessor, ROM, and RAM capacities. Said buffer capacity of controller, 39, 44, or 47, includes capacity for ... organizing, ... inputs ....<br><br>In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating |
|   |  | Column 20 lines 37-39.                                | The signal transmission from processor, 204, also passes a signal word to signal processor, 200, ... | Page 477 lines 8-23.               | By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control</b> ."")  |
| deliver said at least one subscriber datum for  |  |   |  | Page 281 lines 1-6.                | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...   |
|   |  | Column 20 lines 37-42.                                | The signal transmission from processor, 204, also passes a signal word to signal processor, 200,     | Page 477 lines 8-23.               | By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street   |

| Claim Language   | Support to parent application filed November 3, 1981:<br>Reference | Language  | Reference  | Support to instant specification.<br>Language  |
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| presentation with said mass medium programming, said interactive television viewing apparatus having | Column 20 lines 46-49.   | <p>which, in a predetermined fashion, signal processor, 200, decrypts and transfers</p> <p>to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.</p> <p>When the transmission of the recipe is received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing.</p> | <p>Page 282 line 2 to page 283 line 33.</p> <p>Page 478 lines 1-5.</p> <p>Page 473 lines 3-13.</p> | <p>Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called "<b>covert control.</b>")</p> <p>... the information of said segments is encrypted prior to transmission ...</p> <p>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ....</p> <p>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".</p> <p>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)</p> <p>One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b>... instructions ...</p> <p>... selected converter box, 222, to tune said</p> |

| Claim Language   | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference   | Support to instant specification.<br>Language  |
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| a receiver for receiving said first signal from said remote station; | <p>Column 20 lines 27-29.</p> <p>Column 20 lines 29-30.</p>        | <p>... a signal is identified in the incoming programming on TV set, <b>202</b>, by decoder, <b>203</b>, ...</p> <p>... which is also transferred by processor, <b>204</b>, to buffer/comparator, <b>8</b>, of signal processor, <b>200</b>.</p> | <p>Page 477 lines 12-17.</p> <p>Page 477 lines 23-29.</p> <p>Page 478 lines 1-5.</p> <p>Page 475 lines 1-2.</p> <p>Page 471 line 35 to page 472 line 1.</p> <p>Page 472 lines 4-12.</p> <p>Page 37 line 26 to page 38 line 8.</p> | <p>box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....</p> <p>... causes ... said decoder, 290, to detect and process properly the information of said second message.</p> <p>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)</p> <p>Receiving said output information causes printer, 221, to print the information of said specific recipe and list.</p> <p>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ...</p> <p>... Automatically, the controller, 39, of decoder, 145, ... transfers said message to said controller, 20.</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>In this alternate method, ... said first SPAM message causes controller, 20, of signal</p> |



| Claim Language   |  | Support to parent application filed November 3, 1981. |  | Support to instant specification. |  |
|--|--|---|--|-----------------------------------|--|
|  |  | Reference   | Language   | Reference                         | Language   |
|  |  | Column 20 lines 37-39.                                | The signal transmission from processor, 204, also passes a signal word to signal processor, 200, ...   | Page 477 lines 8-23.              | processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating   |
| delivering said at least said first signal at said interactive television viewing apparatus; and     |  | Column 20 lines 41-42.                                | ... to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.   | Page 281 lines 1-6.               | By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control.</b> ")  |
| outputting said at least one subscriber datum in said presentation with said mass medium programming |  | Column 20 lines 46-49.                                | When the transmission of the recipe is received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing. | Page 473 lines 3-13.              | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)   |
|  |  |   |  | Page 477 lines 12-17.             | One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b> ... instructions ...<br>... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission.... |
|  |  |   |  | Page 477 lines 23-29.             | ... causes ... said decoder, 290, to detect and  |

| Claim Language   |  | Support to parent application filed November 3, 1981.                          | Support to instant specification. |   |
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|  |  | Reference  | Language                          | Reference   |
| on the basis of said at least said first signal.   |  |  |                                   | process properly the information of said second message.<br><br>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)<br><br>Receiving said output information causes printer, 221, to print the information of said specific recipe and list.<br><br>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.) |
|  |  |  |                                   | Page 478 lines 1-5.   |
|  |  | Column 20 lines 41-42.   |                                   | Page 475 lines 1-2.<br><br>Page 478 lines 1-5.  |
|  |  |  |                                   | ... to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.  |
| 36. The method of claim 35, wherein at least a portion of said first signal is embedded in the non-visible portion of a television signal. |  | Column 20 lines 27-29.<br><br>Column 4 lines 5-6.<br><br>Column 4 lines 18-22. |                                   | At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ...<br><br>The present invention employs signals embedded in programming.<br><br>In television they may appear on one line in the video portion of the transmission such as line 20 of the vertical interval, or on a portion of one line, or on more than one line, and they will probably lie outside the range of the television picture displayed on a normally tuned television set.   |
| 37. The method of  |  | Column 18 lines 30-41.   |                                   | Periodically thereafter, said program   |

| Claim Language   |  | Support to parent application filed November 3, 1981.  |  | Support to instant specification. |  |
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|  |  | Reference  | Language   | Reference                         | Language   |
| claim 35, wherein information evidencing at least one of the availability, use, and usage of one of said television programming and said mass medium programming is at least one of stored and communicated to a remote data collection station, said method further comprising the step of: selecting evidence information that one of identifies and designates at least one of: |  | decoder, 211, also identify certain signals that monitors or processors, 204 and 210 respectively, determine to identify the programs, etc. on the channels to which TV set, 202, and radio, 209, are tuned, |  |                                   | originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains the "program unit identification code" information of said particular television program, ... Said message is detected at said decoder, 203, and inputted to said controller, 39, in the above described fashion.                              |
|  |  |  |  | Page 414 lines 13-27              | Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains secondary "program unit identification code" information of the audio program unit of said radio transmission ...<br>Said message is detected at said decoder, 210, and inputted to said controller, 44. |
|  |  |  |  | Page 15 lines 16-22               | The frequencies may convey television, radio, or other programming transmissions. The input transmissions may be received by means of antennas or from hard-wire connections. The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions ...          |
|  |  |  | The processors, 204 and 210, transfer this information to signal processor, 200, | Page 36 lines 32-33.              | Each decoder is controlled by a controller, 39, 44, or 47, that has buffer, microprocessor, ROM, and RAM capacities.   |
|  |  |  |  | Page 38 lines 11-14.              | Controller, 39, 44, or 47, has capacity for identifying more than one apparatus to which any given signal should be transferred and for transferring said signal to all said apparatus.  |
|  |  |  |  | Page 411 lines 10-15              | ... because the station of Fig. 7 (and Fig. 7B) is preprogrammed to collect monitor information, receiving said ... message also causes the transmission of monitor  |

| Claim Language | Support to parent application filed November 3, 1981. | Support to instant specification.   |   |
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| Reference      | Language  | Reference   | Language  |
|                |   | <p>Page 418 line 23 to page 419 line 15.</p> <p>Page 411 line 28 to page 412 line 2.</p> <p>Page 173 line 30 to page 174 line 23 from example #3.</p> | <p>information to the onboard controller, 14A, of said signal processor, 200, in the fashion of example #3 above.</p> <p>Because the information of said ... message is transmitted periodically in said radio programming transmission, a subsequent instance of said information ... causes the SPAM decoder apparatus ... to transfer to the onboard controller, 14A, of signal processor, 200, ... a particular third transmission of monitor information containing ... "program unit identification code" information of the audio program unit of said radio transmission.</p> <p>In the fashion of example #3 above, receiving said first transmission of monitor information causes said onboard controller, 14A, to cause a signal record of prior programming of TV set, 202, to be recorded at the recorder, 16, of signal processor, 200, (and may cause records to be transferred to a remote location) and causes said onboard controller, 14A, to initiate a first signal record, ... that is based on the "program unit identification code" information of said particular television program in</p> <p>The station of Fig. 3 is preprogrammed to collect monitor information, ... Under control of said instructions, said match causes control processor, 39J, ... to commence transferring information from control processor, 39J, to buffer/comparator, 14, of signal processor, 200, ... to transfer to said buffer/comparator, 14, ... all of the received binary information of said first message that is recorded at said SPAM-input-signal memory; ... (Said received information is complete information of the first combining synch command, and said information transmitted to buffer/comparator, 14, is called, hereinafter, the "1<sup>st</sup> monitor information (#3).")</p> |

| Claim Language               |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.               |  |
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|                              |  | Reference   | Language  | Reference                                       | Language   |
| (1) mass medium programming; |  |   |   | Page 419 lines 4-15.                            | In the fashion described above, receiving said third transmission of monitor information ... causes said onboard controller, 14A, to initiate a third signal record, ... that is based on the aforementioned secondary "program unit identification code" information of the audio program unit of said radio transmission.  |
|                              |  |   | Simultaneously, processor, 200, is also monitoring sequentially all other broadcast transmissions in the locality to gather further data on programming availability to record and transmit to a remote site. | Page 28 lines 25-35.                            | [Signal processor 200 in Fig. 7] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring ... said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage. |
|                              |  |   |   | Page 397 lines 17-20.                           | Each subscriber station signal processor, 200, operates continuously; scans all incoming channels sequentially at its switch, 1, and mixer, 3, as described in example #5 above; is preprogrammed at its controller, 20, to ...  |
|                              |  | Column 15 lines 62-63.                                | [The signals for which the decoders are monitoring] may convey unique identifier codes for each program or commercial.  | Page 49 lines 26-28.                            | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:   |
|                              |  | Column 16 lines 32-35.                                | For example, a person might instruct video cassette recorder, 135, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.                                      | Page 50 lines 6-7.<br><br>Page 319 lines 30-33. | ...unique identifier codes for each program unit (including commercials);....<br><br>For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.  |

| Claim Language              |                        | Support to parent application filed November 3, 1981.  | Support to instant specification.              |   |
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|                             |                        | Reference  | Language                                       | Reference   |
| (2) a use of data;          | Column 20 lines 27-32. | Five minutes later, a signal is identified in the incoming programming on TV set, 202, by decoder, 203, which is also transferred by processor, 204, to buffer/comparator, 8, of signal processor, 200. This signal instructs buffer/comparator, 8, that, if 567 has been received from signal generator, 225, ... | Page 471 line 26 to page 472 line 17.          | Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for-entered-information-and-process instructions, ...<br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 20, of signal processor, 200. ...<br>Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory ...<br>Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio. |
|                             | Column 3 lines 6-8.    | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.  | Page 14 line 35 to page 15 line 2.             |   |
| (3) a transmission station; | Column 15 lines 60-62. | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.  | Page 49 lines 26-28.<br><br>Page 50 lines 1-4. | Meter-monitor segments contain meter information and/or monitor information.<br>Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...   |
| (4) a receiver station;     | Column 16 lines 56-61. | ... and, in a predetermined fashion, create a signal string  | Page 180 lines 1-3.<br><br>Page 297 line 15.   | Then said process-monitor-info instructions cause onboard controller, 14A, to initiate a new monitor record that reflects the new "Wall Street Week" programming.<br><br>...creating a meter record that records the decryption....   |



| Claim Language                              |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.   |          |
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|   |                        | Reference   | Language                                       | Reference   | Language |
| (6) a broadcast station;                    | Column 15 lines 60-62. | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.   | Page 49 lines 26-28.<br><br>Page 50 lines 1-4. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...  |          |
| (7) a channel on a cable system;            | Column 16 lines 35-41. | Recorder, 135, might receive the programming over Manhattan Cable TV channel 4 and record the programming from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be conveyed to recorder, 135, in a signal unit or units in the programming so received and recorded. | Page 319 line 33 to page 320 line 8.           | Recorder, 217, might receive the programming over Manhattan Cable TV channel 4 and record the programming at the time of original broadcast transmission--from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be transmitted to the subscriber station of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information. |          |
| (8) a time of transmission;                 | Column 15 lines 60-62. | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.   | Page 49 lines 26-28.<br><br>Page 50 lines 1-4. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...  |          |
| (9) a unique identifier datum;              | Column 15 lines 62-63. | [The signals for which the decoders are monitoring] may convey unique identifier codes for each program or commercial.  | Page 49 lines 26-28.<br><br>Page 50 lines 6-7. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... unique identifier codes for each program unit (including commercials);....  |          |
| (10) at least one of a source of data and a | Column 15 lines 63-65. | In the case of data transmitted to the micro-computer, [the signals for which   | Page 49 lines 26-28.                           | Meter-monitor segments contain meter information and/or monitor information.  |          |



| Claim Language   |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.                |   |
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|  |                        | Reference   | Language   | Reference  | Language  |
| supplier of data;  |                        |   | the decoders are monitoring] may be unique codes that identify the source and suppliers of the data. | Page 50 lines 19-20.                             | Examples of categories of such information include: ...<br>... unique codes that identify the sources and suppliers of computer data.   |
| (11) at least one of a distributor and an advertisement; and | Column 15 lines 65-68. | In the case of data received at the printer, [the signals for which the decoders are monitoring] may identify publications, articles, publishers, distributors, advertise ments, etc.   |  | Page 321 lines 1-6.                              | Prerecorded, commercially distributed video and audio tapes, videodiscs, so-called "compact discs" of audio, and so-called "CD ROM" discs of data can also contain unique codes, embedded in the prerecorded programming, that identify the use and usage of said programming when said tapes or discs are played. For example, laser disc player, 232, can<br><br>For example, another of the aforementioned discounts and cents- off coupon specials is of a particular product ... that is advertised ...<br><br>At printer, 221, the printed so-called "hard copy" of said offer and coupon information emerges as:<br>.....<br>15 cents off 15 cents off<br>Nabisco Zweiback Teething Toast<br>..... |
| (12) an indication of copyright.                             | column 20 lines 49-58. | ...and thence to printer, 221, for printing. Other signal decoder, 227, identifies a signal in the transmission received by printer, 221, which it passes via processor, 228, and buffer/comparator, 14, of signal processor, 200, to data recorder, 16. This signal indicates that the |  | Page 49 lines 26-28.<br><br>Page 50 lines 14-17. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>...unique codes for programming (other than programming identified by program unit  |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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|  | Reference   | Language  | Reference  | Language   |
|  |   | recipe, itself, has been received.<br>Subsequently, when signal processor, 200, transfers the data in its data recorder, 16, via telephone to a remote site, that site can determine for billing purposes that the recipe was, first, ordered and, second, delivered.   |  | codes) whose use obligates users to make payments (eg., royalties and residuals); ....   |
| 38. The method of claim 35, wherein said first signal incorporates executable code said method further comprising the steps of: communicating said executable code to said processor and | Column 17 lines 39-46.                                | Signal processor apparatus have the ability to identify instruction and information signals in one or more inputted television and radio programming transmissions, identify and discriminate among one or more pieces of external equipment to which such signals are addressed, and transfer such signals to such equipment as directed. This permits many valuable techniques for facilitating the operation of such external equipment. | <p>Page 15 lines 16-23.</p> <p>Page 34 lines 24-26.</p> <p>Page 44 lines 14-15.</p> <p>Page 95 lines 18-21.</p> <p>Page 390 lines 26-29.</p> | <p>The frequencies may convey television, radio, or other programming transmissions....The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information; ...</p> <p>... identifies the particular apparatus to which said signals are addressed, and outputs said signals to said apparatus ...</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that ...</p> <p>Receiving the header and execution segment of said first message causes controller, 39, to determine that said message is addressed to URS microcomputers, 205, and to transfer said message to microcomputer, 205.</p> <p>The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of ultimate receiver stations in varieties of ways.</p> |
| performing, on the basis of said executable  | Column 17 lines 45-46.                                | This permits many valuable techniques for facilitating the operation of such  | Page 390 lines 26-29.  | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants  |

| Claim Language   | Support to parent application filed November 3, 1981   | Support to instant specification.   |
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| Reference  | Language   | Language  |
| code, at least one of:   | external equipment.  | as appropriate, can be used to automate the operations of ultimate receiver stations in varieties of ways.  |
| (1) receiving a second signal containing said mass medium programming; | <p>Column 17 lines 62-64.</p> <p>Signal processor, 200, is always operating and monitors all incoming channels.</p>  | <p>Each subscriber station signal processor, 200, operates continuously; scans all incoming channels sequentially at its switch, 1, and mixer, 3, as described in example #5 above;...</p>  |
|  | <p>Column 20 lines 33-36.</p> <p>... instruct tuner, 223, to tune cable converter box, 222, to the appropriate channel to receive the recipe in encoded digital form ...</p> | <p>(An alternate method for inputting said second message to the microcomputers, 205, at stations where TV567# is entered at a local input, 225, is to embed said message in a particular second transmission that is different from the transmission of said "Exotic Meals of India" programming and to cause a selected All signal decoder, 290, at each one of said stations to receive said second transmission, thereby causing said decoder, 290, to detect and transfer the information of said second message to the microcomputer, 205, of said station.</p> |
|  | <p>Column 20 lines 36-37.</p> <p>... and instruct control means, 226, to activate printer, 221.</p>  | <p>In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations to cause the tuner, 223, of a selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to establish a programming communication link between said selected converter box, 222, and said decoder, 290; to cause the appropriate receiver apparatus of said decoder, 290, to receive said transmission....</p>  |
|  | <p>Page 474 lines 3-7.</p>   | <p>...instructions causes microcomputer, 205, to generate information of the specific fish curry recipe and fish curry shopping list of the family of the subscriber of the station of Figs. 7 and 7F: to cause said recipe and shopping</p>  |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.                               |  |
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|  | Reference   | Language  | Reference   | Language   |
| (2) actuating at least one of a video storage or output device, an audio storage or output device, and a print storage or output device to one of store and output said mass medium programming; | Column 18 lines 62-67.                                | In a predetermined fashion, either microcomputer, <b>205</b> , or signal processor, <b>200</b> , instructs tuner, <b>223</b> , to set cable converter box, <b>222</b> , to the proper channel, and microcomputer, <b>200</b> , may record the information in memory or transfer it to printer, <b>221</b> , for printing. | Page 423 lines 11-13.<br><br>Page 424 lines 2-9.                | list to be printed at printer, 221 ....<br><br>Receiving said message causes said controller, 20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; ....<br><br>Then receiving a particular to-223 instruction from said control processor, 20A, causes controller, 20, to transmits particular instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark.<br><br>Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.) |
|  | Column 19 lines 1-4.                                  | In the same fashion, microcomputer, <b>205</b> , may also instruct signal processor, <b>200</b> , to monitor single or multiple television channels and/or radio channels for programming of interest to play or record.  | Page 419 line 34 to page 420 line 2.<br><br>Page 11 lines 5-10. | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.<br><br>The present invention consists of an integrated system of methods and apparatus for communicating programming. The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio,  |
|  |   |   |   |  |
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| Claim Language   |                        | Support to parent application filed November 3, 1981.  | Support to instant specification.    |   |
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|  |                        | Reference  | Language                             | Reference   |
|  |                        | Language   | Reference                            | Language  |
| (3) decrypting at least a portion of said mass medium programming; | Column 20 lines 37-42. | The signal transmission from processor, 204, also passes a signal word to signal processor, 200, | Page 477 lines 8-23.                 | broadcast print, and computer programming as well as combined medium programming.<br><br>In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...<br><br>By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control.</b> ") |
|  |                        |  | Page 281 lines 1-6.                  | ... the information of said segments is encrypted prior to transmission ...<br>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message....<br>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".  |
|  |                        | which, in a predetermined fashion, signal processor, 200, decrypts and transfers                 | Page 282 line 2 to page 283 line 33. |   |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.                |  |
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|   | Reference   | Language  | Reference  | Language   |
|   |   | to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.  | Page 478 lines 1-5.                              | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)   |
| (4) controlling a selective transfer device to communicate said mass medium programming to at least one of a storage device and an output device; | Column 18 lines 62-67.                                | In a predetermined fashion, either microcomputer, 205, or signal processor, 200, instructs tuner, 223, to set cable converter box, 222, to the proper channel, and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing. | Page 423 lines 11-13.<br><br>Page 424 lines 2-9. | Receiving said message causes said controller, 20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; .....<br><br>Then receiving a particular to-223 instruction from said control processor, 20A, causes instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark.<br><br>Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.) |
|   | Column 19 lines 67 to column 20 line 2.               | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.   | Page 451 line 3.<br>Page 26 lines 8-11.          | And the Fig. 1C combining is displayed.<br><br>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own   |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |  |
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|  | Reference   | Language   | Reference  | Language   |
| (5) generating a receiver specific datum to on the basis of information contained in said mass medium programming; and | Column 19 lines 45-49.                                | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205 ... | <p>Page 451 lines 6-7.</p> <p>Page 23 line 35 to page 24 line 4.</p> <p>Page 37 line 26 to page 38 line 8.</p> | <p>portfolio performance overlaid on the studio generated graphic.</p> <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...</p> <p>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to ...</p> <p>And the Fig. 1C combining is displayed.</p> <p>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.</p> |
|  | Column 19 lines 67 to column 20 line 2.               | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.  | <p>Page 24 lines 5-6.</p> <p>Page 451 lines 7-9.</p> <p>Page 451 line 3.</p> <p>Page 26 lines 8-11.</p>        |  |
|  |   |  |  |  |
| (6) delivering a receiver specific datum   | Column 19 lines 60-66.                                | At this point, an instruction signal is generated in the television studio   | Page 25 line 33 to page 26 line 2..  | Then the host says, "And here is what your portfolio did." At this point, an instruction   |

| Support to parent application filed November 3, 1981. |           | Support to instant specification. |           |
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| Claim Language  | Reference | Language                          | Reference |

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| at said interactive television viewing apparatus at least one of simultaneously and sequentially with said mass medium programming. | originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ... | <p>signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.</p> | <p>Page 37 line 26 to page 38 line 8.</p> <p>Page 26 lines 4-8.</p> |
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| 39. A method for mass medium programming promotion and | Column 20 lines 19-23. | Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input." | Page 471 lines 6-13. | Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal |
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| Support to parent application filed November 3, 1981.   |                        | Support to instant specification.  |                                      |
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| Claim Language  | Reference              | Language   | Reference                            |
| delivery for use with                                   | Column 20 lines 46-49. | When the transmission of the recipe is received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing. | Page 473 lines 3-13.                 |
| an interactive mass medium programming output apparatus | Column 18 lines 43-45. | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion.                 | Page 477 lines 12-17.                |
| capable of storing at least one subscriber              | Column 20 lines 37-42. | The signal transmission from processor, 204, also passes a signal word to signal   | Page 477 lines 23-29.                |
|   |                        |  | Page 478 lines 1-5.                  |
|   |                        |  | Page 475 lines 1-2.                  |
|   |                        |  | Page 419 line 34 to Page 420 line 2. |
|   |                        |  | Page 477 lines 8-23.                 |

Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#".

One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... **generate-recipe**... instructions ...

... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....

... causes ... said decoder, 290, to detect and process properly the information of said second message.

(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)

Receiving said output information causes printer, 221, to print the information of said specific recipe and list.

Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.

In this alternate method, ... said first SPAM message causes controller, 20, of signal

| Support to instant specification.  |  |  |
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| Claim Language   | Reference  | Language   |
| Support to parent application filed November 3, 1981.  | Reference  | Language   |
| datum with independent interactive mass medium programming output apparatus specific relevance, said method comprising the steps of: | processor, 200, of each one of said stations ... to cause an instance of particular <b>control</b> information that is in said instruction- to be placed at particular control-function- invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...<br><br>By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control.</b> ")<br><br>... the information of said segments is encrypted prior to transmission ...<br>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ...<br>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".<br><br>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, | processor, 200, of each one of said stations ... to cause an instance of particular <b>control</b> information that is in said instruction- to be placed at particular control-function- invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...<br><br>By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control.</b> ")<br><br>... the information of said segments is encrypted prior to transmission ...<br>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ...<br>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".<br><br>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, |
|  | processor, 200, which, in a predetermined fashion, signal processor, 200, decrypts and transfers   | Page 281 lines 1-6.<br><br>Page 282 line 2 to page 283 line 33.  |
|  | to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.   | Page 478 lines 1-5.  |

| Support to parent application filed November 3, 1981.  |  | Support to instant specification.   |  |
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| Claim Language   | Reference  | Language  | Reference  |
|  |  |   | in the method of the first message of example #4.) |
| outputting mass medium programming that promotes a specific fashion of presenting information to one of complete and supplement said mass medium programming, said interactive mass medium programming output apparatus having an input device to receive input from a subscriber;           | Column 20 lines 19-23.<br><br>Column 20 lines 23-26. | Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input."  | Page 471 lines 6-13.<br><br>Page 471 lines 14-21.  |
|  |  | Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#".<br><br>Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ...--enters TV567#, in a fashion well known in the art, at the keyboard of the specific local input, 225, of his own station which causes said input, 225, to transmit a particular preprogrammed process-local-input instruction and said TV567# information to the controller, 20, of the signal processor, 200, of said station. |  |
| prompting said subscriber during said mass medium programming whether said subscriber wants said information to one of complete and supplement said mass medium programming presented in said specific fashion promoted in said step of displaying, said interactive mass medium programming | Column 20 lines 19-23.                               | Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input."   | Page 471 lines 6-13.                               |
|  | Column 20 lines 46-49.                               | When the transmission of the recipe is received, box 222, transfers the   | Page 473 lines 3-13.                               |
|  |  | One minute later, said program originating studio embeds in the transmission of said  |  |

| Support to parent application filed November 3, 1981.   |  | Support to instant specification.   |  |
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| Claim Language  | Reference  | Reference   | Language   |
| output apparatus having an output device for outputting information in said specific fashion;   | transmission to decrypter, 224, for decryption and thence to printer, 221, for printing. | Page 477 lines 12-17.<br><br>Page 477 lines 23-29.<br><br>Page 478 lines 1-5.<br><br>Page 475 lines 1-2.  | <p>"Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b>... instructions ...</p> <p>... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....</p> <p>... causes ... said decoder, 290, to detect and process properly the information of said second message.</p> <p>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)</p> <p>Receiving said output information causes printer, 221, to print the information of said specific recipe and list.</p> |
| receiving a reply from said subscriber at said input device in response to said step of prompting said subscriber, said interactive mass medium programming output apparatus having a processor for processing said subscriber reply and controlling delivery of said mass medium | <p>Column 20 lines 23-26.</p> <p>Column 20 lines 31-36.</p>                              | <p>The viewer then presses buttons 567 on local input, 225, which signal is conveyed to the buffer/comparator, 8 (referring to Fig. 1), of signal processor, 200, ...</p> <p>This signal instructs buffer/comparator, 8, that, if 567 has been received from signal generator, 225, signal processor, 200, should, in a predetermined fashion, instruct tuner, 223, to tune cable</p> | <p>Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ...--enters TV567#, in a fashion well known in the art, at the keyboard of the specific local input, 225, of his own station which causes said input, 225, to transmit a particular preprogrammed process-local-input instruction and said TV567# information to the controller, 20, of the signal processor, 200, of said station.</p> <p>Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for-entered-information-</p>   |

| Claim Language                           |  | Support to parent application filed November 3, 1981. |  | Support to instant specification.    |   |
|--|--|---|--|--------------------------------------|---|
|  |  | Reference   | Language   | Reference                            | Language  |
| programming in response to instructions; |  |   | converter box, 222, to the appropriate channel to receive the recipe in encoded digital form ... |                                      | and-process instructions, ...<br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 20, of signal processor, 200. ...<br>Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-memory ... |
|  |  |   |  | Page 476 line 34 to page 477 line 8. | (An alternate method for inputting said second message to the microcomputers, 205, at stations where TV567# is entered at a local input, 225, is to embed said message in a particular second transmission that is different from the transmission of said "Exotic Meals of India" programming and to cause a selected All signal decoder, 290, at each one of said stations to receive said second transmission, thereby causing said decoder, 290, to detect and transfer the information of said second message to the microcomputer, 205, of said station.                            |
|  |  |   |  | Page 477 lines 8-17.                 | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations to cause the tuner, 223, of a selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to establish a programming communication link between said selected converter box, 222, and said decoder, 290; to cause the appropriate receiver apparatus of said decoder, 290, to receive said transmission ...   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  |   | Support to instant specification.   |          |
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|   |                        | Reference  | Language  | Reference   | Language |
| delivering said instructions at said interactive mass medium programming output apparatus | Column 7 lines 39-49.  | In a pre-determined fashion, buffer/comparator, 8, identifies signal words and/or signal units that must be decrypted, either in whole or in part, and passes identified signal words and/or units to decrypter, 10. Decrypter, 10, uses conventional decrypter techniques, well known in the art, in a pre-determined fashion to decrypt such signals as required. Decrypter, 10, then passes the decrypted signals to processor or monitor, 12. Buffer/comparator, 8, passes signal words and units not identified as requiring decryption directly to processor or monitor, 12. | Page 472 lines 13-23.   | Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory and to cause an instance of particular covert control information (which is preprogrammed in said instructions) to be placed at particular control-function-invoking information memory of the controller, 39, of decoder, 145, and also at particular control-function-invoking information memory of the controller, 39, of decoder, 203.   |          |
| in response to said step of receiving said reply,   | Column 20 lines 31-33. | ... that, if 567 has been received from signal generator, 225, signal processor, 200, should, in a predetermined fashion, ...  | Page 473 lines 14-17.   | At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred ..   |          |
| said instructions controlling said interactive mass medium programming output apparatus;  | Column 7 lines 50-54.  | Processor or monitor, 12, analyzes, in a pre-determined fashion, the signal words and units that it receives and determines whether they are to be passed to external equipment or to buffer/comparator, 14, for further processing or both.   | Page 472 lines 16-17.<br>Page 472 lines 27-32.<br>Page 473 lines 14-19. | controller, 20, to determine that TV567# information exists at said last-local-input-# memory ...<br>(At stations where TV567# information does not exist at last-local-input-# memory of the controllers, 20, said instructions cause said controllers, 20, to cease executing and delete all information of said instructions without placing any information at the decoders, 145 and 203, ...<br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 39, of decoder, 203. Automatically, the controller, 39, of decoder, 145, transmits ... |          |

| Support to parent application filed November 3, 1981.                                     |                        | Support to instant specification.  |   |
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| Claim Language  | Reference              | Language   | Reference   |
| processing said instructions from said step of delivering, said instructions effective to | Column 7 lines 50-58.  | Processor or monitor, 12, analyzes, in a pre-determined fashion, the signal words and units that it receives and determines whether they are to be passed to external equipment or to buffer/comparator, 14, for further processing or both. If a signal or signals are to be passed externally, processor unit, 12, identifies, in a pre-determined fashion, the external equipment to which the signal or signals are addressed and passes them to appropriate jack ports for external transmission. | Page 473 lines 29-31.   |
| select said at least one subscriber datum for   | Column 20 lines 37-42. | The signal transmission from processor, 204, also passes a signal word to signal processor, 200,   | Page 477 lines 8-23.  |
|   |                        |  | Page 281 lines 1-6.   |
|   |                        | which, in a predetermined fashion, signal processor, 200, decrypts and transfers   | Page 282 line 2 to page 283 line 33.  |
|   |                        |  | By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called "covert control.")  |
|   |                        |  | ... the information of said segments is encrypted prior to transmission ...<br>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the  |
|   |                        |  | Receiving said message causes the controller, 39, of decoder, 203, to load and execute said generate-recipe-and-shopping-list instructions at microcomputer, 205, ...   |
|   |                        |  | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ... |

| Support to parent application filed November 3, 1981. |                        | Support to instant specification. |   |
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| Claim Language  | Reference              | Reference                         | Language  |
|   |                        |                                   | <p>apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ...</p> <p>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".</p> <p>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)</p>   |
| presentation with said mass medium programming; and   | Column 20 lines 46-49. | Page 478 lines 1-5.               | <p>One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b>... instructions ...</p> <p>... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....</p> <p>... causes ... said decoder, 290, to detect and process properly the information of said second message.</p> <p>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example</p> |
|   |                        | Page 473 lines 3-13.              |   |
|   |                        | Page 477 lines 12-17.             |   |
|   |                        | Page 477 lines 23-29.             |   |
|   |                        | Page 478 lines 1-5.               |   |



| Support to parent application filed November 3, 1981.   |                        | Support to instant specification.  |  |
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| Claim Language  | Reference              | Language   | Reference  |
|   |                        |  | #4.)   |
|   |                        | Receiving said output information causes printer, 221, to print the information of said specific recipe and list.  | Page 475 lines 1-2.                                |
| presenting said information to one of complete and supplement said mass medium programming in said specific fashion | Column 20 lines 46-49. | When the transmission of the recipe is received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing.   | Page 473 lines 3-13.                               |
|   |                        | One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b> ... instructions ...<br>... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....<br>... causes ... said decoder, 290, to detect and process properly the information of said second message. | Page 477 lines 12-17.<br><br>Page 477 lines 23-29. |
|   |                        | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)   | Page 478 lines 1-5.                                |
|   |                        | Receiving said output information causes printer, 221, to print the information of said specific recipe and list.  | Page 475 lines 1-2.                                |
| on the basis of said instructions.  | Column 20 lines 41-42. | ... to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.   | Page 478 lines 1-5.                                |
|   |                        | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)   |  |



| Claim Language |  | Support to parent application filed November 3, 1981.                            |  | Support to instant specification.     |  |
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|                |  | Reference  |  | Reference                             |  |
|                |  | Language   |  | Language                              |  |
| of:            |  |  |  |                                       | or other programming transmissions. The input transmissions may be received by means of antennas or from hard-wire connections. The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions ...  |
|                |  | The processors, 204 and 210, transfer this information to signal processor, 200, |  | Page 36 lines 32-33.                  | Each decoder is controlled by a controller, 39, 44, or 47, that has buffer, microprocessor, ROM, and RAM capacities.   |
|                |  |  |  | Page 38 lines 11-14.                  | Controller, 39, 44, or 47, has capacity for identifying more than one apparatus to which any given signal should be transferred and for transferring said signal to all said apparatus.  |
|                |  |  |  | Page 411 lines 10-15                  | ... because the station of Fig. 7 (and Fig. 7B) is preprogrammed to collect monitor information, receiving said ... message also causes the transmission of monitor information to the onboard controller, 14A, of said signal processor, 200, in the fashion of example #3 above.   |
|                |  |  |  | Page 418 line 23 to page 419 line 15. | Because the information of said ... message is transmitted periodically in said radio programming transmission, a subsequent instance of said information ... causes the SPAM decoder apparatus ... to transfer to the onboard controller, 14A, of signal processor, 200, ... a particular third transmission of monitor information containing ... "program unit identification code" information of the audio program unit of said radio transmission. |
|                |  | for recording and subsequent transmission to a remote data collection site.      |  | Page 411 line 28 to page 412 line 2.  | In the fashion of example #3 above, receiving said first transmission of monitor information causes said onboard controller, 14A, to cause a signal record of prior programming of TV set, 202, to be recorded at the recorder, 16, of   |

| Support to parent application filed November 3, 1981. |   | Support to instant specification.  |   |
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| Claim Language  | Reference   | Language   | Reference   |
|   |   | signal processor, 200, (and may cause records to be transferred to a remote location) and causes said onboard controller, 14A, to initiate a first signal record, ... that is based on the "program unit identification code" information of said particular television program in   |   |
|   |   | The station of Fig. 3 is preprogrammed to collect monitor information, ... Under control of said instructions, said match causes control processor, 39J, ... to commence transferring information from control processor, 39J, to buffer/comparator, 14, of signal processor, 200, ... to transfer to said buffer/comparator, 14, ... all of the received binary information of said first message that is recorded at said SPAM-input-signal memory; ... (Said received information is complete information of the first combining synch command, and said information transmitted to buffer/comparator, 14, is called, hereinafter, the "1 <sup>st</sup> monitor information (#3).") | Page 173 line 30 to page 174 line 23 from example #3. |
|   |   | In the fashion described above, receiving said third transmission of monitor information ... causes said onboard controller, 14A, to initiate a third signal record, ... that is based on the aforementioned secondary "program unit identification code" information of the audio program unit of said radio transmission.  | Page 419 lines 4-15.                                  |
|   | Simultaneously, processor, 200, is also monitoring sequentially all other broadcast transmissions in the locality to gather further data on programming availability to record and transmit to a remote site. | [Signal processor 200 in Fig. 7] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring ... said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability  | Page 28 lines 25-35.                                  |

| Support to parent application filed November 3, 1981. |                        | Support to instant specification.   |   |
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| Claim Language  | Reference              | Language  | Reference   |
|   |                        |   |   |
|   |                        | and usage.  |   |
|   |                        | Each subscriber station signal processor, 200, operates continuously; scans all incoming channels sequentially at its switch, 1, and mixer, 3, as described in example #5 above; is preprogrammed at its controller, 20, to ...   | Page 397 lines 17-20.   |
| (1) mass medium programming;                          | Column 15 lines 62-63. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>...unique identifier codes for each program unit (including commercials);....<br><br>For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City. | Page 49 lines 26-28.<br><br>Page 50 lines 6-7.<br><br>Page 319 lines 30-33. |
| (2) a use of programming;                             | Column 18 lines 30-35. | Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains the "program unit identification code" information of said particular television program, ... Said message is detected at said decoder, 203, and inputted to said controller, 39, in the above escribed fashion.            | Page 408 lines 18-29  |
| (3) a transmission station;                           | Column 15 lines 60-62. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...  | Page 49 lines 26-28.<br><br>Page 50 lines 1-4.                              |

| Claim Language |                     | Support to parent application filed November 3, 1981. |  | Support to instant specification. |   |
|----------------|---------------------|---|--|-----------------------------------|---|
|                |                     | Reference   | Language   | Reference                         | Language  |
| (4)            | a receiver station; | Column 16 lines 56-61.                                | ... and, in a predetermined fashion, create a signal string  | Page 180 lines 1-3.               | Then said process-monitor-info instructions cause onboard controller, 14A, to initiate a new monitor record that reflects the new "Wall Street Week" programming.   |
|                |                     |   | by appending digital information to the received signal which information might  | Page 297 line 15.                 | ... creating a meter record that records the decryption....   |
|                |                     |   | identify the individual decoder, 131, 136, 138, 143, 145, 147, 149, or 150 and the time of receipt at signal processor, 130.   | Page 180 lines 4-15.              | Automatically, said instructions cause onboard controller, 14A, in a predetermined fashion, to delete ... except the source mark information associated with said record; to record information of said first named instance of "program unit identification code" information (which is the "program unit identification code" of said "Wall Street Week" program to a particular "program unit identification code" location at said record location; to select particular information located at said SPAM-input-signal-@14A register memory and record information at said record location; to select particular preprogrammed record.... |
| (5)            | a network;          |   |  | Page 181 lines 8-14.              | In a predetermined fashion, onboard controller, 14A, also records in a particular monitor record field location at said record location a particular display unit identification code that identifies monitor, 202M, as the display apparatus of said new monitor record. In a predetermined fashion, signal processor, 200, records date and time information received from clock, 18, in first and last particular time field...  |
|                |                     | Column 16 lines 32-35.                                | For example, a person might instruct video cassette recorder, 135, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City. | Page 319 lines 30-33.             | For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.  |
|                |                     | Column 16 lines 39-41.                                | Each discrete bit of this information could  | Page 320 lines 2-8.               | Each discrete bit of this information could be  |

| Support to parent application filed November 3, 1981. |                        |   | Support to instant specification.              |   |
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| Claim Language  | Reference              | Language  | Reference                                      | Language  |
|   |                        | be conveyed to recorder, 135, in a signal unit or units in the programming so received and recorded.  |  | transmitted to the subscriber station of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information.   |
| (6) a broadcast station;                              | Column 15 lines 60-62. | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.   | Page 49 lines 26-28.<br><br>Page 50 lines 1-4. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...  |
| (7) a channel on a cable system;                      | Column 16 lines 35-41. | Recorder, 135, might receive the programming over Manhattan Cable TV channel 4 and record the programming from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be conveyed to recorder, 135, in a signal unit or units in the programming so received and recorded. | Page 319 line 33 to page 320 line 8.           | Recorder, 217, might receive the programming over Manhattan Cable TV channel 4 and record the programming at the time of original broadcast transmission--from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be transmitted to the subscriber station of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information. |
| (8) a time of transmission;                           | Column 15 lines 60-62. | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.   | Page 49 lines 26-28.<br><br>Page 50 lines 1-4. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...  |
| (9) a unique identifier datum;                        | Column 15 lines 62-63. | [The signals for which the decoders are monitoring] may convey unique identifier codes for each program or commercial.  | Page 49 lines 26-28.                           | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:  |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|                | Reference   | Language | Reference                         | Language |

|   |                        |   |  |   |
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|   |                        |   | Page 50 lines 6-7.   | ...unique identifier codes for each program unit (including commercials);....   |
| (10) at least one of a source of data and a supplier of data; | Column 4 lines 5-6.    | These techniques employ signals embedded in programs.   | Page 13 lines 25-26.   | The present invention employs signals embedded in programming.  |
| (11) at least one of a distributor and an advertisement; and  | Column 15 lines 65-68. | In the case of data received at the printer, [the signals for which the decoders are monitoring] may identify publications, articles, publishers, distributors, advertise ments, etc. | Page 321 lines 1-6.<br><br>Page 360 lines 31-34.<br><br>Page 496 lines 12-13.<br><br>Page 496 lines 28-35. | <p>Prerecorded, commercially distributed video and audio tapes, videodiscs, so-called "compact discs" of audio, and so-called "CD ROM" discs of data can also contain unique codes, embedded in the prerecorded programming, that identify the use and usage of said programming when said tapes or discs are played. For example, laser disc player, 232, can</p> <p>For example, another of the aforementioned discounts and cents- off coupon specials is of a particular product ... that is advertised ...</p> <p>At printer, 221, the printed so-called "hard copy" of said offer and coupon information emerges as:</p> <p>.....</p> <p>. 15 cents off                      15 cents off .</p> <p>. Nabisco Zweiback Teething Toast .</p> <p>. . . . .</p> |
| (12) an indication of a payment obligation.                   | column 20 lines 49-58. | ...and thence to printer, 221, for printing. Other signal decoder, 227, identifies a signal in the transmission received by printer, 221, which it passes via                         | Page 49 lines 26-28.   | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:  |



| Support to parent application filed November 3, 1981.  |                        | Support to instant specification.   |   |   |
|--|------------------------|---|---|---|
| Claim Language   | Reference              | Language  | Reference   |   |
|  |                        | processor, 228, and buffer/comparator, 14, of signal processor, 200, to data recorder, 16. This signal indicates that the recipe, itself, has been received.<br>Subsequently, when signal processor, 200, transfers the data in its data recorder, 16, via telephone to a remote site, that site can determine for billing purposes that the recipe was, first, ordered and, second, delivered.   | Page 50 lines 14-17.  | ...unique codes for programming (other than programming identified by program unit codes) whose use obligates users to make payments (eg., royalties and residuals),....  |
| 42. The method of claim 39, wherein said instructions incorporate executable code said method further comprising the steps of: | Column 17 lines 39-46. | Signal processor apparatus have the ability to identify instruction and information signals in one or more inputted television and radio programming transmissions, identify and discriminate among one or more pieces of external equipment to which such signals are addressed, and transfer such signals to such equipment as directed. This permits many valuable techniques for facilitating the operation of such external equipment. | Page 15 lines 16-23.<br><br>Page 34 lines 24-26.<br><br>Page 44 lines 14-15.<br><br>Page 95 lines 18-21.<br><br>Page 390 lines 26-29. | The frequencies may convey television, radio, or other programming transmissions....The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information; ...<br><br>... identifies the particular apparatus to which said signals are addressed, and outputs said signals to said apparatus ...<br><br>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that ...<br><br>Receiving the header and execution segment of said first message causes controller, 39, to determine that said message is addressed to URS microcomputers, 205, and to transfer said message to microcomputer, 205.<br><br>The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of ultimate receiver stations in varieties of ways. |

*12CM 150, Appendix A, Page 17*

| Support to parent application filed November 3, 1981.                           |  | Support to instant specification.   |   |
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| Claim Language  | Reference  | Language  | Reference   |
| communicating said executable code to said processor; and                       | Column 17 lines 39-46.                               | Signal processor apparatus have the ability to identify instruction and information signals in one or more inputted television and radio programming transmissions, identify and discriminate among one or more pieces of external equipment to which such signals are addressed, and transfer such signals to such equipment as directed. This permits many valuable techniques for facilitating the operation of such external equipment. | Page 15 lines 16-23.<br><br>Page 34 lines 24-26.<br><br>Page 44 lines 14-15.<br><br>Page 95 lines 18-21.<br><br>Page 390 lines 26-29.   |
| performing, on the basis of said executable code, at least one of the steps of: | Column 17 lines 45-46.<br><br>Column 17 lines 62-64. | This permits many valuable techniques for facilitating the operation of such external equipment.<br><br>Signal processor, 200, is always operating and monitors all incoming channels.  | The frequencies may convey television, radio, or other programming transmissions....The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information; ...<br><br>... identifies the particular apparatus to which said signals are addressed, and outputs said signals to said apparatus ...<br><br>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that ...<br><br>Receiving the header and execution segment of said first message causes controller, 39, to determine that said message is addressed to URS microcomputers, 205, and to transfer said message to microcomputer, 205.<br><br>The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of ultimate receiver stations in varieties of ways.<br><br>The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of ultimate receiver stations in varieties of ways.<br><br>Each subscriber station signal processor, 200, operates continuously; scans all incoming channels sequentially at its switch, 1, and mixer, 3, as described in example #5 above;.... |

| Support to parent application filed November 3, 1981.  |  | Support to instant specification.   |   |
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| Claim Language   | Reference  | Language  | Reference   |
| (1) receiving a first signal containing said information to supplement said mass medium programming;   | Column 20 lines 33-36.                               | ... instruct tuner, 223, to tune cable converter box, 222, to the appropriate channel to receive the recipe in encoded digital form ...   | Page 476 line 34 to page 477 line 8.<br><br>Page 477 lines 8-17.  |
| (2) actuating at least one of a video output device, an audio output device, and a print output device to one of output said information to supplement said mass | Column 17 lines 62-64.<br><br>Column 18 lines 62-67. | Signal processor, 200, is always operating and monitors all incoming channels.<br><br>In a predetermined fashion, either microcomputer, 205, or signal processor, 200, instructs tuner, 223, to set cable converter box, 222, to the proper channel, and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing.   | Each subscriber station signal processor, 200, operates continuously; scans all incoming channels sequentially at its switch, 1, and mixer, 3, as described in example #5 above;....<br><br>Receiving said message causes said controller, 20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; ..... |
|  |  | (An alternate method for inputting said second message to the microcomputers, 205, at stations where TV567# is entered at a local input, 225, is to embed said message in a particular second transmission that is different from the transmission of said "Exotic Meals of India" programming and to cause a selected All signal decoder, 290, at each one of said stations to receive said second transmission, thereby causing said decoder, 290, to detect and transfer the information of said second message to the microcomputer, 205, of said station.<br><br>In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations to cause the tuner, 223, of a selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to establish a programming communication link between said selected converter box, 222, and said decoder, 290; to cause the appropriate receiver apparatus of said decoder, 290, to receive said transmission.... |   |
|  |  | Then receiving a particular to-223 instruction from said control processor, 20A, causes controller, 20, to transmits particular   |   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  |  | Support to instant specification.  |   |
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| Reference   |                        | Language   |  | Reference  |   |
| Language  |                        | Language   |  | Language   |   |
| medium programming and output information in said specific fashion; |                        |  |  |  | instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark.<br><br>Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.) |
|   | Column 19 lines 1-4.   | In the same fashion, microcomputer, 205, may also instruct signal processor, 200, to monitor single or multiple television channels and/or radio channels for programming of interest to play or record. |  | Page 426 lines 10-18.<br><br>Page 419 line 34 to page 420 line 2.<br><br>Page 11 lines 5-10. | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.<br><br>The present invention consists of an integrated system of methods and apparatus for communicating programming. The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming as well as combined medium programming.   |
|   | Column 20 lines 37-42. | The signal transmission from processor, 204, also passes a signal word to signal processor, 200,   |  | Page 477 lines 8-23.   | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>control</b> to cause an instance of particular <b>control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the  |

| Claim Language    | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference   | Support to instant specification.<br>Language  |
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|                   |  | <p>which, in a predetermined fashion, signal processor, <b>200</b>, decrypts and transfers</p> <p>to decrypter, <b>224</b>, to serve as the code upon which decrypter, <b>224</b>, will decrypt the incoming encrypted recipe.</p> | <p>Page 281 lines 1-6.</p> <p>Page 282 line 2 to page 283 line 33.</p> <p>Page 478 lines 1-5.</p> | <p>controller, 39, of said decoder, 290. In due course, said programming originating ...</p> <p>By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called "<b>covert control</b>.")</p> <p>... the information of said segments is encrypted prior to transmission ...</p> <p>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ...</p> <p>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".</p> <p>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)</p> |
| (4) controlling a | Column 18 lines 62-67.   | In a predetermined fashion, either   | Page 423 lines 11-13.   | Receiving said message causes said controller,   |

| Support to parent application filed November 3, 1981.                                 |  | Support to instant specification.  |   |
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| Claim Language  | Reference  | Language   | Reference   |
| selective transfer device to communicate specific output to a specific output device; |  | microcomputer, 205, or signal processor, 200, instructs tuner, 223, to set cable converter box, 222, to the proper channel, and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing. | <p>20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; .....</p> <p>Then receiving a particular to-223 instruction from said control processor, 20A, causes controller, 20, to transmits particular instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark.</p> <p>Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&amp;T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&amp;T news item.)</p> <p>Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.</p> <p>The present invention consists of an integrated system of methods and apparatus for communicating programming. The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming as well as combined medium programming.</p> |
|   | Page 424 lines 2-9.  |  |   |
|   | Page 426 lines 10-18.  |  |   |
|   | Page 419 line 34 to page 420 line 2.   |  |   |
|   | Page 11 lines 5-10.  |  |   |
|   | microcomputer, 205, or signal processor, 200, instructs tuner, 223, to set cable converter box, 222, to the proper channel, and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing. |  |   |
|   | In the same fashion, microcomputer, 205, may also instruct signal processor, 200, to monitor single or multiple television channels and/or radio channels for programming of interest to play or record.                               |  |   |
|   | Column 19 lines 1-4.   |  |   |

| Support to parent application filed November 3, 1981.   |   | Support to instant specification.  |   |
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| Claim Language  | Reference                               | Language   | Reference   |
| (5) generating a receiver specific datum to present with at least one of said mass medium programming to and said information to supplement said mass medium programming; and | Column 19 lines 45-49.                  | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205 ...   | Page 451 lines 6-7.<br><br>Page 23 line 35 to page 24 line 4.<br><br>Page 37 line 26 to page 38 line 8. |
|   |   | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.<br><br>Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...<br><br>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to ...<br><br>And the Fig. 1C combining is displayed. |   |
|   | Column 19 lines 67 to column 20 line 2. | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.  | Page 24 lines 5-6.<br><br>Page 451 lines 7-9.<br><br>Page 451 line 3.<br><br>Page 26 lines 8-11.        |
| (6) delivering a receiver specific datum at said interactive mass medium programming output apparatus at least  | Column 19 lines 60-66.                  | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203,  | Page 25 line 33 to page 26 line 2..   |
|   |   | Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is   |   |

| Support to parent application filed November 3, 1981.  |           | Support to instant specification.  |  |
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| Claim Language   | Reference | Language   | Reference  |
| one of simultaneously and sequentially with one of said mass medium programming and said information to supplement said mass medium programming. |           | and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ...   | identified by decoder, 203; transferred to microcomputer, 205; and executed ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
|  |           |  | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |
| Column 19 line 67 to column 20 line 7.   |           | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic. When the two studio generated graphics are no longer displayed, the studio stops sending the instruction signal, and the microcomputer, 205, ceases transmitting its own graphic to TV set, 202, and prepares to send the next locally generated graphic overlay upon instruction from the originating studio. | TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.<br><br>And the Fig. 1C combining is displayed.   |
|  |           |  | As the program proceeds, in the same fashion a further instruction signal is generated at said studio; transmitted; detected; inputted from decoder, 203, to microcomputer, 205; and   |



| Claim Language | Support to parent application filed November 3, 1981:<br>Reference | Language | Reference                                       | Support to instant specification.<br>Language   |
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|                |  |          | <p>Page 451 line 22 to<br/>page 452 line 5.</p> | <p>executed as "GRAPHICS OFF." Then said studio ceases transmitting the graphic image, and transmits another image such as the host's talking head. Simultaneously, the GRAPHICS OFF command causes microcomputer, 205, to cease overlaying the graphic information onto the received composite video and to commence transmitting the received composite video transmission unmodified. Thereafter the "Wall Street Week" program proceeds, and microcomputer, 205, continues to operate under control of received instructions.</p> <p>Furthermore, it is undesirable to separate computer operations merely because they result in the generation of separate overlays because such separation may result in unnecessary duplication of calculations. For example, the Fig. 1C display of user specific overall stock portfolio performance could be followed by second and third displays that analyze portions of the subscriber's portfolio-- eg., the portion invested in New York Stock Exchange listed stocks in comparison to the so-called "NYSE" index and the portion invested in so-called "over-the-counter" stocks in comparison to the so-called "NASDAQ" index. In order to calculate the value of the overall portfolio, it is necessary to calculate the value of these portions. To require that the values of the portions be recalculated for subsequent overlays would be inefficient.</p> <p>In computer-based combined medium communications, the amount of information that a given system can convey is dependent on the efficiency of the employment of program instruction sets and combining synch commands.</p> |

| Claim Language   |  | Support to parent application filed November 3, 1981.  |   | Support to instant specification.  |  |
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|  |  | Reference  |   | Language   |  |
| 43. A method of controlling a receiver station including at least one stored subscriber datum with independent receiver specific relevance, comprising the steps of: | Column 10 line 64 to column 11 line 3. | At distribution amplifiers, 63 through 70, each incoming feed is split into two paths. One is the conventional path whereby programming has flowed and continues to flow to recording devices, 76 and 78, and/or to flow to field distribution system, 93. The other path flows from each distribution amplifier, 63 through 70, individually to signal processor, 71. | Page 325 lines 17-27.   | In line between each of the aforementioned receiver/demodulator/input apparatus, 53, 54, 55, 56, 57, 58, 59, 60, 61, or 62, and matrix switch, 75, is a dedicated distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, that splits each incoming feed into two paths. One path is the conventional path whereby programming flows from each given receiver/demodulator/input apparatus, 53, 54, 55, 56, 57, 58, 59, 60, 61, or 62, to matrix switch, 75. The other path inputs the transmission of said given receiver/demodulator/input apparatus, 53, 54, 55, 56, 57, 58, 59, 60, 61, or 62, individually to signal processor system, 71.  |  |
|  | Column 19 lines 35-41.                 | Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day. It may receive these directly or it may automatically query a data service for them in a predetermined fashion. It records those prices that relate to the stocks in its stored portfolio.                         | Page 324 line 31 to page 325 line 2.<br><br>Page 449 lines 13-35. | Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire to a conventional matrix switch, 75, well known in the art, that outputs to one or more recorder/players, 76 and 78, and/or to apparatus that outputs said transmissions over various channels to the cable system's field distribution system, 93, ...<br><br>Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. (Said remote station transmits said closing stock price data and causes specific subscriber stations to select and process their specific information of interest in the fashion in which remote news-service-A station transmitted the AT&T news item and caused selected stations |  |

| Claim Language                          |  | Support to parent application filed November 3, 1981. |          | Support to instant specification. |   |
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|   |  | Reference   | Language | Reference                         | Language  |
| detecting one of a presence and         |  |   |          |                                   | to select and process, in their specific fashions, the information of said item.) Alternatively, microcomputer, 205, is caused in a predetermined fashion (for example, by a SPAM message a given transmission monitored by signal processor, 200, in any of the above described fashions) automatically to telephone a remote data service computer, by means of network, 262, in a fashion well known in the art, and to cause said remote computer to select and transmit the particular closing price datum or data of the stock or stocks of the portfolio of said microcomputer, 205, thereby causing said microcomputer, 205, to record said datum or data in a predetermined fashion. |
|   |  |   |          |                                   | This base band signal is then transferred through separate paths to three separate detector devices.  |
| an absence of                           |  |   |          |                                   | Buffer/comparator, 8, transfers signals that do not require decryption directly to processor or controller, 12.   |
|   |  |   |          |                                   | Controller, 20, has capacity for keeping track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, automatically causes control processor, 39J, to cause all apparatus of decoder, 30, cease receiving SPAM message information and delete all information received on said wireless channel 9 and causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13.   |
| one of a broadcast control signal and a |  |   |          |                                   | Fig. 2 shows one embodiment of a signal processor. Said processor, 26, is configured  |
|   |  |   |          |                                   |   |

| Claim Language                                       |                       | Support to parent application filed November 3, 1981. |   | Support to instant specification.    |  |
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|  |                       | Reference   | Language  | Reference                            | Language   |
| cablecast  |                       |   | conveys both television and radio programming and a broadcast television input is shown in Figure 1.  |                                      | for simultaneous use with a cablecast input that conveys both television and radio programming and a broadcast television input.   |
| control signal;                                      | Column 8 lines 58-60. |   | Control signals can be passed to the apparatus by means of the programming transmissions input at switch, 1, and mixer, 2.                                    | Page 290 lines 26-31.                | ... causes the oscillator, 6, then to cause switch, 1, and mixer, 3, to select information of a particular master cable control channel (that may or may not be cable channel 13) from the multi-channel cable system transmission inputted to signal processor, 200, and to input said selected to TV signal decoder, 30; ... |
|  |                       |   |   | Page 291 lines 21-24.                | In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at decoder, 30, (to which said master control channel is inputted), to detect the information of said message, ...  |
|  |                       |   |   | Page 59 lines 29-31.                 | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations.  |
| inputting an instruct-to-react signal to a processor | Column 8 lines 27-29. |   | The controller, 20, inputs the local oscillator, 6, a sequential pattern to select the various channels to be received by switch, 1, and mixers, 2 and 3.     | Page 248 line 35 to page 249 line 5. | In a predetermined fashion, controller, 20, controls oscillator, 6, to sequence local oscillator, 6, in the pattern: cable channel 2, cable channel 4, cable channel 7, cable channel 13, wireless channel 5, wireless channel 9, wireless channel 13, then to repeat said pattern.  |
| based on said step of detecting;                     | Column 8 lines 62-65. |   | The processor unit, 12, has the capacity to identify instruction signals for controller, 20, and pass them to controller, 20, over control information lines. | Page 251 lines 3-8.                  | Thereafter, the embedded information ... is caused to be recorded ... in the same fashion that the embedded information of said message is detected and recorded at decoder, 203, in example #3.   |
|  |                       |   |   | Page 253 lines 10-11.                | Finally, controller, 39J, transmits particular detection-complete information to controller, 20; ...   |

| Claim Language  |                                      | Support to parent application filed November 3, 1981.  |  | Support to instant specification.   |  |
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| Reference   |                                      | Language   |  | Reference   |  |
| Language  |                                      | Language   |  | Language  |  |
| controlling said processor to output specific information in response to said instruct-to-react signal; and | Column 8 line 68 to column 9 line 4. | Buffer/comparator, 8, and monitor or processor, 12, each have the capacity to inform controller, 20, when signals that they ... look for in predetermined fashions, set by and changeable by controller, 20, fail to appear. | Page 253 lines 19-22.<br><br>Page 258 lines 10-19. | Receiving said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 5.<br><br>Controller, 20, has capacity for keeping track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, automatically causes control processor, 39J, to cause all apparatus of decoder, 30, cease receiving SPAM message information and delete all information received on said wireless channel 9 and causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13. |  |
|   | Column 9 lines 53-57.                | The local oscillator, being thus sequenced, will allow each signal decoder, 30 and 40, to receive a particular frequency at a particular time interval.  | Page 257 line 24 to page 258 line 19.              | Said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 9. Automatically oscillator, 6, causes mixer, 3, to select the frequency of channel 9 and input said frequency of interest, at a fixed frequency, to decoder, 30 ...<br>Controller, 20, has capacity for keeping track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13.   |  |
|   |                                      |  | Page 265 line 27 to Page 266 line 21.              | Said radio-detection-complete information causes ... controller, 20, to cause oscillator, 6,  |  |

| Claim Language          |  | Support to parent application filed November 3, 1981. |                       | Support to instant specification. |   |
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|                         |  | Reference   |                       | Reference                         |   |
| Language                |  | Language  |                       | Language                          |   |
| selecting said at least |  |   |                       |                                   | to cause the selection of the next frequency in the predetermined radio frequency selection pattern: 99.0 MHz. Automatically oscillator, 6, causes mixer, 2, to select said frequency and input it, at a fixed frequency, to decoder, 40 ...<br>After determining, in a predetermined fashion, that a particular predetermined period of time has elapsed from the input of said 99.0 MHz frequency to decoder, 40, controller, 20, ... causes oscillator, 6, to cause the selection of the next frequency in the predetermined radio frequency selection pattern: 100.0 MHz. |
|                         | This will define the timing of the composite outputs of the digital detectors, 34, 37, and 38 in FIG. 2A, and 43 in FIG. 2B. |   | Page 250 lines 13-17. |                                   | Example #5 begins with the embedding and transmitting, at the remote station that originates the "Wall Street Week" broadcast, of the first message of the "Wall Street Week" program which is the message of the first combining synch command.  |
|                         |  |   | 251 lines 8-11.       |                                   | Receiving said embedded information causes the binary SPAM information of said first command, with error correcting information, to be detected at detector, 34; ...<br>... said information to radio decoder, 42, which decodes the the embedded signal information of said command and transmits said signal information to digital detector, 43, which detects the binary information with error correcting bit information of said command and transfers said binary and bit information to controller, 44.   |
|                         |  |   | Page 263 lines 19-24. |                                   | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46.  |
|                         |  |   | Page 37 lines 26-28.  |                                   |   |
|                         |  |   | Page 26 lines 1-8.    |                                   | Said signal is identified by decoder, 203;  |

| Claim Language   |   | Support to parent application filed November 3, 1981.  |  | Support to instant specification.  |  |
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|  |   | Reference  | Language   | Reference  | Language   |
| one datum  |   |  | to transmit the first overlay to TV set, 202,... |  | transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. |
| for at least one of simultaneous                         | Column 18 lines 43-45.                  | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion. | Page 419 line 34 to Page 420 line 2.             | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.  |  |
| and sequential presentation with mass medium programming | Column 19 lines 67 to column 20 line 2. | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.                      | Page 451 line 3.<br>Page 26 lines 8-11.          | And the Fig. 1C combining is displayed.<br>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.   |  |
|  | Column 19 lines 59-60.                  | Then the host says, "And here is what your portfolio did."   | Page 25 lines 33-34.                             | Then the host says, "And here is what your portfolio did."   |  |
|  | Column 19 line 67 to column 20 line 1.  | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...  | Page 26 lines 8-11.                              | TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...  |  |
| on the basis of information received from said processor | Column 19 lines 39-41.                  | [Microcomputer, 205,] records those prices that relate to the stocks in its stored portfolio.  | Page 449 lines 13-20.                            | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. |  |

17CM 150 Appendix A, Page 183

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.   |  |
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|  | Reference   | Language   | Reference   | Language   |
| based on said step of controlling said processor.  | Column 19 line 67 to column 20 line 1.                | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...  | Page 26 lines 8-11.   | TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...  |
| 44. The method of claim 43, wherein a buffer is operatively connected to said processor for buffering input, said method further comprising the step of: | Column 8 lines 7-12.<br><br>Column 8 lines 20-25.     | <p>Buffer/comparator, 14, also has means for determining, in a predetermined fashion, when signals require transfer immediately to a remote site and for communicating such a requirement to controller, 20, and such signals directly with the remote site via telephone connection, 22.</p> <p>The signal processor apparatus also has a controller device which includes programmable random access memory controller 20, read only memory 21 that may contain a unique digital code capable of identifying the signal processing apparatus uniquely, an automatic dialing device 24, and a telephone unit, 22.</p> | <p>Page 32 lines 16-20.</p> <p>Page 33 lines 7-12.</p> <p>Page 156 line 33 to page 157 line 10.</p> | <p>Buffer/comparator, 14, also has means for transferring received information immediately to a remote site or sites via telephone connection, 22, and for communicating a requirement for such transfer to controller, 20, which causes such transfer.</p> <p>Signal processor, 26, has a controller device which includes programmable RAM controller, 20; ROM, 21, that may contain unique digital code information capable of identifying signal processor, 26, and the subscriber station of said processor, 26, uniquely; an automatic dialing device 24; and a telephone unit, 22.</p> <p>Fig. 3A shows one such preferred controller, 39.</p> <p>One aspect of the preferred embodiment of controller, 39, is a series of buffers and processors at which forward error correction, protocol conversion, and the invoking of controlled functions take place in series. Buffer, 39A, and processor, 39B, are the first buffer and processor of the series and perform the forward error correcting functions of controller, 39. Buffer, 39C, and processor, 39D, are the second buffer and processor and perform protocol conversion functions. Buffer, 39E, and control processor, 39J, are the third buffer and processor. All controlled functions invoked at controller, 39, by received SPAM signals are invoked at control</p> |



| Claim Language  |                                      | Support to parent application filed November 3, 1981.  |          | Support to instant specification.  |   |
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|   |                                      | Reference  | Language | Reference  | Language  |
| bypassing said buffer and inputting said instruct-to-react signal directly to said processor. |                                      |  |          | processor, 39J.<br>As Fig. 3A shows, each processor, 39B, 39D, and 39J, has associated RAM and ROM and, hence, constitutes a programmable controller in its own right. |   |
|   | Column 8 lines 62-65.                | The processor unit, 12, has the capacity to identify instruction signals for controller, 20, and pass them to controller, 20, over control information lines.  |          | Page 157 line 34 to page 158 line 1.<br>Page 251 lines 3-8.  | Thereafter, the embedded information ... is caused to be recorded ... in the same fashion that the embedded information of said message is detected and recorded at decoder, 203, in example #3.  |
|   |                                      |  |          | Page 253 lines 10-11.  | Finally, controller, 39J, transmits particular detection-complete information to controller, 20; ...  |
|   | Column 8 line 68 to column 9 line 4. | Buffer/comparator, 8, and monitor or processor, 12, each have the capacity to inform controller, 20, when signals that they ... look for in predetermined fashions, set by and changeable by controller, 20, fail to appear. |          | Page 253 lines 19-22.  | Receiving said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 5.  |
|   |                                      |  |          | Page 258 lines 10-19.  | Controller, 20, has capacity for keeping track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, automatically causes control processor, 39J, to cause all apparatus of decoder, 30, cease receiving SPAM message information and delete all information received on said wireless channel 9 and causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13. |
|   |                                      |  |          | Page 254 line 23 to page 255 line 3.   | ... information and transmit it to digital detector, 34; causing digital detector, 34, to detect the binary information of said signal information and transfer said binary information to controller, 39. Receiving said   |

| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language | Reference                   | Support to instant specification.<br>Language  |
|----------------|--|----------|-----------------------------|--|
|                |  |          | <p>Page 259 lines 3-29.</p> | <p>binary information at controller, 39, causes the binary SPAM information of the wireless channel 5 transmission to be checked and corrected, as necessary, at processor, 39B; converted into locally usable binary information at processor, 39D; and checked for end of file signal information at EOFs valve, 39F, and transmitted to the null output of matrix switch, 39I, until EOFs valve, 39F, detects an end of file signal. In due course, said EOFs valve, 39F, receives the aforementioned end of file signal causing said valve, 39F, to detect said signal and transmit the aforementioned interrupt signal of EOFs-signal-detected information to said control processor, 39J. Receiving said EOFs-signal-detected ...</p> <p>In due course said remote wireless station transmits the end of file signal that terminates said information segment, and the EOFs valve, 39F, of decoder, 30, receives and detects said signal, in its end of file detecting fashion, causing said valve, 39F, to transmit the aforementioned EOFs-signal-detected information to said control processor, 39J. Just as applied in the case of the 2nd command (#5), receiving said EOFs-signal-detected information causes control processor, 39J, to cause EOFs valve, 39F, to discard all information of said end of file signal; to cause said matrix switch, 39I, to cease transferring SPAM message information from said EOFs valve, 39F, to its null output information and commence transferring SPAM message information from said valve, 39F, to said control processor, 39J; then to cause EOFs valve, 39F, to recommence processing inputted signal words in its preprogrammed fashion and transferring said words to matrix switch, 39I, and to commence waiting to receive from said switch, 39I, the binary</p> |

| Support to parent application filed November 3, 1981.  |                        | Support to instant specification.   |  |
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| Claim Language   | Reference              | Language  | Reference  |
|  |                        |   |  |
|  |                        | information of a subsequent SPAM header.<br>Subsequently, said remote wireless station transmits the second combining synch command of the "Wall Street Week" program. (Hereinafter, said command may be called the "3 <sup>rd</sup> command (#5).")  |  |
| 45. The method of claim 43, wherein said processor processes a first datum designating at least one of a television channel and television programming, said method further comprising at least one of the steps of: | Column 19 lines 17-23. | ... processor or monitor, 12, which reacts, in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X. | <p>Page 435 lines 16-18.</p> <p>Page 267 lines 20-28 from example #5.</p> <p>Page 436 line 9 to page 437 line 3.</p>   |
|  |                        |   | <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...</p> <p>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>Receiving said Select-WSW-Program- Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW information and said ... enable-WSW-on-CC13...</p> <p>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week"</p> |

| Claim Language   |                        | Support to parent application filed November 3, 1981.  |                       | Support to instant specification. |   |
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|  |                        | Reference  |                       | Reference                         |   |
|  |                        | Language   |                       | Language                          |   |
| controlling a tuner to tune a receiver to receive said at least one of said television channel and said television programming designated by said processed datum; |                        |  |                       |                                   | <p><i>program when said program is transmitted.</i></p> <p>Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW -on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>... to receive the transmission of cable channel 13; ...</p>  |
|  | Column 19 lines 27-29. | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week." | Page 439 lines 14-15. |                                   | <p>... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.</p> <p>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW -on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>Receiving said please-fully-enable-</p> |
|  | Column 19 lines 23-25. | ... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X ...  | Page 437 lines 1-6.   |                                   |   |

| Claim Language   |                        | Support to parent application filed November 3, 1981.  |          | Support to instant specification.  |   |
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|  |                        |  |          |  | WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ...<br>... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;<br>...<br>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its...<br>...to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;<br>...   |
|  |                        |  |          | Page 439 lines 9-15.<br><br>Page 295 lines 6-8.<br><br>Page 439 lines 9-15.  |   |
| controlling a selective transfer device to input to  | Column 19 lines 27-29. | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week."                 |          | Page 445 line 24 to page 446 line 1.<br><br>Page 446 lines 17-21.<br><br>Page 451 lines 6-7.<br><br>Page 23 line 35 to | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.<br><br>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...<br><br>Subsequently, a second series of instructions |
| a control signal detector at least a portion of said at least one of said television channel and | Column 19 lines 45-49. | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to |          |  |   |

| Claim Language  |   | Support to parent application filed November 3, 1981. |  | Support to instant specification.                             |   |
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|   |   | Reference   | Language   | Reference   | Language  |
| said television programming designated by said processed datum; |   |   | microcomputer, 205. These signals instruct microcomputer, 205 ...  | page 24 line 4.   | is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.  |
|   |   |   |  | Page 37 line 26 to page 38 line 8.                            | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
|   |   | Column 6 lines 48-50.                                 | This base band signal is then transmitted through separate paths to three separate detector devices.   | Page 24 lines 5-6.<br><br>Page 451 lines 7-9.                 | Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...<br><br>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to ...  |
|   | causing a control signal detector to detect at least one control signal in said at least one of said television channel and said television programming designated by said processed datum; | Column 17 lines 28-33.                                | ... control information connections between signal processor, 130, and the remote decoders which would permit signal decoder, 130, to alter the methods of operation of said remote decoders. Such control information connections are included in signal processing apparatus and methods.) | Page 34 line 35 to page 35 line 1.<br><br>Page 318 lines 2-7. | This base band signal is then transferred through separate paths to three separate detector devices.<br><br>By such bus means, onboard controller, 14A, can cause any on or all of said decoders to commence or cease processing and transmitting SPAM monitor information and can cause any one or all of said decoders to change the location or locations that are searched for SPAM information. Fig. 5 shows that, ...                             |
| controlling a selective transfer device to                      |   | Column 19 lines 27-29.                                | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to   | Page 445 line 24 to page 446 line 1.                          | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission   |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |
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|  | Reference   | Language   | Reference                          | Language  |
| input to a computer control signals detected in said at least one of said television channel and said television programming designated by said processed datum; | Column 19 lines 43-49.                                | "Wall Street Week."  |                                    | of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.   |
|  |   | ... instruction signals embedded in the "Wall Street Week" programming transmission.               | Page 446 lines 17-21.              | In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...  |
|  |   | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening,                    | Page 21 lines 23-24.               | ... instruction signals embedded in the "Wall Street Week" programming transmission.  |
|  |   | several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. | Page 451 lines 6-7.                | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...   |
|  |   |  | Page 23 line 35 to page 24 line 4. | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.  |
|  |   |  | Page 37 line 26 to page 38 line 8. | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
|  |   |  |                                    | Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...   |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.   |  |
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|   | Reference   | Language  | Reference                           | Language   |
| controlling a computer to respond to control signals detected in said at least one of said television channel and said television programming designated by said processed datum; |   | These signals instruct microcomputer, <b>205</b> , ...  | Page 24 lines 5-6.                  |  |
|   | Column 19 lines 42-44.                                | Microcomputer, <b>205</b> , is preprogramed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   | Page 21 lines 20-24.                | Microcomputer, <b>205</b> , is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   |
|   | Column 19 lines 46-53.                                | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, <b>203</b> , and transferred to microcomputer, <b>205</b> . These signals instruct microcomputer, <b>205</b> , ... <b>upon command</b> . | Page 23 line 35 to page 24 line 16. | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, <b>203</b> , and inputted to microcomputer, <b>205</b> , in the same fashion as the first series. Microcomputer, <b>205</b> , evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, <b>203</b> , inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.") |
|   |   |   | Page 44 lines 14-17.                | A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function  |



| Claim Language |  | Support to parent application filed November 3, 1981.  |          | Support to instant specification.  |  |
|----------------|--|--|----------|--|--|
|                |  | Reference  | Language | Reference  | Language   |
|                | Column 19 line 60 to column 20 line 1. | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. |          | Page 26 lines 20-28.<br><br>Page 25 line 34 to page 26 line 2.<br><br>Page 37 line 26 to page 38 line 8. | <p>or functions. A command is always constituted of at least a</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)</p> <p>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205;</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> |

| Claim Language  |                        | Support to parent application filed November 3, 1981:  |   | Support to instant specification.    |  |
|---|------------------------|--|---|--------------------------------------|--|
|   |                        | Reference  | Language  | Reference                            | Language   |
|   |                        |  | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, for as long as it receives the same instruction signal from processor, 204.   | Page 26 lines 4-11.                  | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic. And microcomputer, 205, commences ... |
|   |                        |  | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...   |                                      |  |
| controlling a television monitor to display at least one of video and audio contained in said at least one of said television channel and said television programming designated by said processed datum; | Column 19 lines 27-29. | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week."   | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion. | Page 445 line 24 to page 446 line 1. | In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...   |
| controlling a storage device to process one of video and audio contained in said at least one of said television channel and said television programming designated by said processed datum; and          | Column 19 lines 23-27. | ... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X and may instruct control system, 220, to turn video recorder, 217, on and record "Wall Street Week," ... | Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, 20.<br>Receiving said please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ...  | Page 437 lines 1-6.                  |  |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification. |  |
|--|---|--|-----------------------------------|--|
|  | Reference   | Language   | Reference                         | Language   |
|  |   |  | Page 439 lines 9-15.              | ... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13; ...<br>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its...             |
|  |   |  | Page 295 lines 6-8.               | ... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13; ...  |
|  |   |  | Page 439 lines 9-15.              | ... instructions causes controller, 20, ...; to switch power on to video recorder/player, 217,...  |
|  |   |  | Page 445 lines 24-27.             | ... controller, 20, ... causes recorder/player, 217, to record said information of the "Wall Street Week" program.   |
|  |   |  | Page 446 lines 18-23.             |  |
|  |   |  | Page 437 lines 1-6.               | Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, 20.<br>Receiving said please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ... |
|  |   |  | Page 295 lines 6-8.               | Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its ...   |
| controlling a selective transfer device to communicate to at least one of a storage device and a television monitor said at least one of said television channel and said television programming designated by said processed datum. | Column 19 lines 23-29.                                | ... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X and may instruct control system, 220, to turn video recorder, 217, on and record "Wall Street Week," and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week." | Page 439 lines 9-15.              | ... to cause selected apparatus of said station--cable converter box, 201, ... to  |

| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Language  | Support to instant specification.<br>Reference   | Language  |
|---|--|---|--|---|
|   |  |   | <p>Page 445 lines 24-27.</p> <p>Page 446 lines 18-23.</p> <p>Page 445 line 24 to page 446 line 1.</p> <p>Page 445 line 35 to page 446 line 1.</p> <p>Page 446 lines 17-21.</p> | <p>receive the transmission of cable channel 13;<br/>...</p> <p>... instructions causes controller, 20, ... to switch power on to video recorder/player, 217, ...</p> <p>... controller, 20, ... causes recorder/player, 217, to record said information of the "Wall Street Week" program.</p> <p>... instructions causes controller, 20, to switch power on to monitor, 202M, ...</p> <p>Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, ...</p> <p>... and to tune monitor, 202M, in a predetermined fashion.</p> <p>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...</p> |
| 46. The method of claim 43, wherein said processor processes a datum designating at least one specific channel of one | Column 19 lines 17-23.   | ... processor or monitor, 12, which reacts, in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X. | <p>Page 435 lines 16-18.</p> <p>Page 267 lines 20-28 from example #5.</p>  | <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...</p> <p>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said</p>  |

| Claim Language                 | Support to parent application filed November 3, 1981.                | Support to instant specification.   |
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| Reference                      | Language   | Language  |
|                                |  | <p>microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p>  |
|                                | <p>Page 436 line 9 to page 437 line 3.</p>                           | <p>Receiving said Select-WSW-Program- Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW information and said ... enable-WSW-on-CC13...</p> <p>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>... to receive the transmission of cable channel 13; ...</p> |
|                                | <p>Page 439 lines 14-15.</p>   | <p>Fig. 2 shows one embodiment of a signal processor. Said processor, 26, is configured for simultaneous use with a cablecast input that conveys both television and radio</p>  |
| <p>of a multichannel cable</p> | <p>Column 6 lines 23-26.</p> <p>A signal processor apparatus for</p> | <p>Page 29 lines 4-7.</p>   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  | Support to instant specification.   |
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|   |                        | Reference  | Language  |
|   |                        | Reference  | Language  |
| signal and a multichannel broadcast signal, said method further comprising at least one of the steps of:                  |                        |  | programming and a broadcast television input.   |
| controlling a tuner to tune a converter to receive said at least one specific channel designated by said processed datum; | Column 19 lines 23-25. | simultaneous use with a cablecast input that conveys both television and radio programming and a broadcast television input is shown in Figure 1.<br><br>... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X ... | Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.<br>Receiving said please-fully-enable-WSW-on-CC13-at- particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ...<br><br>... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;<br>...<br><br>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its...<br><br>...to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;<br>...<br><br>... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion. |
| controlling a selective transfer device to input to   | Column 19 lines 27-29. | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week."   | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.   |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |
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|  | Reference   | Language   | Reference  | Language  |
| a control signal detector at least a portion of said at least one specific channel designated by said processed datum; | Column 19 lines 45-49.                                | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205 ... | <p>Page 446 lines 17-21.</p> <p>Page 451 lines 6-7.</p> <p>Page 23 line 35 to page 24 line 4.</p> <p>Page 37 line 26 to page 38 line 8.</p> <p>Page 24 lines 5-6.</p> <p>Page 451 lines 7-9.</p> | <p>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...</p> <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...</p> <p>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to ...</p> |
| causing a control signal detector to detect at least one control signal in said at least one specific channel          | Column 17 lines 28-33.                                | ... control information connections between signal processor, 130, and the remote decoders which would permit signal decoder, 130, to alter the methods of operation of said remote decoders.                                    | Page 318 lines 2-7.  | By such bus means, onboard controller, 14A, can cause any on or all of said decoders to commence or cease processing and transmitting SPAM monitor information and can cause any one or all of said decoders to   |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |
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|  | Reference   | Language   | Reference  | Language  |
| designated by said processed datum;  |   | Such control information connections are included in signal processing apparatus and methods.)   |  | change the location or locations that are searched for SPAM information. Fig. 5 shows that, ...   |
| controlling a selective transfer device to   | Column 19 lines 27-29.                                | ... and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week."  | Page 445 line 24 to page 446 line 1.   | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.   |
| input to a computer control signals detected in said at least one specific channel designated by said processed datum; | Column 19 lines 43-49.                                | ... instruction signals embedded in the "Wall Street Week" programming transmission.<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. | Page 446 lines 17-21.<br><br>Page 21 lines 23-24.<br><br>Page 451 lines 6-7.<br><br>Page 23 line 35 to page 24 line 4. | In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...<br><br>... instruction signals embedded in the "Wall Street Week" programming transmission.<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...<br><br>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in |



| Claim Language  |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.   |  |
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|   |  | Reference   | Language  | Reference                           | Language   |
| controlling a computer to respond to control signals detected in said at least one specific channel designated by said processed datum; |  |   | These signals instruct microcomputer, 205, ...  | Page 24 lines 5-6.                  | a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.<br><br>Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...  |
|   |  | Column 19 lines 42-44.                                | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programing transmission.   | Page 21 lines 20-24.                | Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   |
|   |  | Column 19 lines 46-53.                                | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, ... upon command. | Page 23 line 35 to page 24 line 16. | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.") |
|   |  |   |   | Page 44 lines 14-17.                | A command is an instance of signal   |



| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference  | Support to instant specification.<br>Language  |
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|   |  | <p>This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, for as long as it receives the same instruction signal from processor, 204.</p> <p>The viewer then sees a microcomputer generated graphic of his own stocks' performance ...</p> | Page 26 lines 4-11.  | <p>fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic. And microcomputer, 205, commences ...</p>   |
| controlling a television monitor to display at least one of video and audio contained in said at least one specific channel designated by said processed datum; | Column 19 lines 27-29.   | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week."  | <p>Page 445 line 24 to page 446 line 1.</p> <p>Page 446 lines 17-21.</p> | <p>... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.</p> <p>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...</p> |
| controlling a video recorder to one of record and play one of video and audio contained in said at least one specific   | Column 19 lines 23-27.   | ... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X and may instruct control system, 220, to turn video recorder, 217, on and record "Wall Street Week," ...  | Page 437 lines 1-6.  | <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>Receiving said please-fully-enable-</p>  |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |
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|  | Reference   | Language   | Reference  | Language  |
| channel designated by said processed datum; and  |   |  | <p>Page 439 lines 9-15.</p> <p>Page 295 lines 6-8.</p> <p>Page 439 lines 9-15.</p> <p>Page 445 lines 24-27.</p> <p>Page 446 lines 18-23.</p> | <p>WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ...</p> <p>... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13; ...</p> <p>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its ...</p> <p>... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13; ...</p> <p>... instructions causes controller, 20, ...; to switch power on to video recorder/player, 217,...</p> <p>... controller, 20, ... causes recorder/player, 217, to record said information of the "Wall Street Week" program.</p> |
| controlling a selective transfer device to communicate to at least one of a storage device and an output device said at least one specific channel designated by said processed datum. | Column 19 lines 23-29.                                | ... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X and may instruct control system, 220, to turn video recorder, 217, on and record "Wall Street Week," and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week." | <p>Page 437 lines 1-6.</p> <p>Page 295 lines 6-8.</p>  | <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, 20.</p> <p>Receiving said please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ...</p> <p>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its</p>   |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|                | Reference   | Language | Reference                         | Language |

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|  |  |  | <p>associated converter box, 201, to convert its ...</p> <p>... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13; ...</p> <p>... instructions causes controller, 20, ... to switch power on to video recorder/player, 217, ...</p> <p>... controller, 20, ... causes recorder/player, 217, to record said information of the "Wall Street Week" program.</p> <p>... instructions causes controller, 20, to switch power on to monitor, 202M, ...</p> <p>Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, ...</p> <p>... and to tune monitor, 202M, in a predetermined fashion.</p> <p>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...</p> |
|  |  |  | <p>Page 439 lines 9-15.</p> <p>Page 445 lines 24-27.</p> <p>Page 446 lines 18-23.</p> <p>Page 445 line 24 to page 446 line 1.</p> <p>Page 445 line 35 to page 446 line 1.</p> <p>Page 446 lines 17-21.</p>   |

|                                       |                        |  |                                      |   |
|---------------------------------------|------------------------|--|--------------------------------------|---|
| 47. A method of processing signals to | Column 18 lines 43-45. | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion. | Page 419 line 34 to Page 420 line 2. | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information. |
|---------------------------------------|------------------------|--|--------------------------------------|---|

| Claim Language                                       | Support to parent application filed November 3, 1981. |  | Support to instant specification.                                    |  |
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|  | Reference   | Language   | Reference  | Language   |
|  | Column 19 lines 31-34.                                | FIG 6C can also illustrate how programming delivered at different times to one place can be co-ordinated to give a multimedia presentation at one time in one place. | Page 18 lines 24-27.<br><br>page 450 line 27 to<br>page 451 line 11. | Fig. 7C is a block diagram of signal processing apparatus and methods selecting and receivable information and programming and controlling combined medium, multi-channel presentations.<br><br>(To accomplish all this has required only that the subscriber of microcomputer, 205, [and other subscribers at other stations] cause the installation and connection of the apparatus shown in the figures of this submission, especially Fig. 7 (and 7C); caused his microcomputer, 205, to be preprogrammed as described above; and preinformed microcomputer, 205, of his wish to view said "Wall Street Week" program by causing the aforementioned select-WSW information to be recorded at said microcomputer, 205.)<br>Then the combined medium combining process described above in "One Combined Medium" and in examples #1, #2, #3, #4, etc. commences. And the Fig. 1C combining is displayed.<br>But the combining of Fig. 1C is just part of a larger process.<br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.<br><br>TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ... |
| deliver a receiver specific programming presentation | Column 19 line 67 to<br>column 20 line 1.             | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...  | Page 26 lines 8-11.  |  |
| at a receiver station, said receiver station having  | Column 17 lines 47-53.                                | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS.                | Page 390 lines 30-35.  | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6;   |

| Support to parent application filed November 3, 1981.      |  | Support to instant specification.  |  |
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| Claim Language   | Reference  | Reference  | Language   |
| a computer and an output device, with said computer having | Column 19 lines 64-66.                               | 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit.<br><br>This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,... | and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.<br><br>Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.<br><br>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. |
| a memory location for storing data and                     | Column 18 lines 65-67.<br><br>See "data" in Fig. 6C. | ... and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing ...  | Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.)  |
| said output device outputting one of video, audio, and     | Column 19 lines 27-29.                               | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week."   | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.  |

| Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |
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| Claim Language  | Reference  | Reference  | Language  |
| hardcopy, said method comprising the steps of:        | Column 19 line 53-56.                            | Page 446 lines 17-21.<br><br>Page 25 lines 26-33.                          | In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...<br><br>During this time the program may show the so-called "talking head" of the host as he describes the behavior of the stock market over the course of the week. Then the host says, "Now as we turn to the graphs, here is what the Dow Jones Industrials did in the week just past," and a studio generated graphic is transmitted. Fig. 1B shows the image of said graphic as it appears on the video screen of TV monitor, 202M.<br><br>Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.) |
|   | Column 18 lines 65-67.                           | Page 426 lines 10-18.  | Subsequently in the program, the host says, "Here is what the Dow Jones Industrials did is the past week," and a studio generated graphic is pictured.<br><br>... and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing ...   |
|   | Column 18 lines 62-65.<br>See "data" in Fig. 6C. | Page 423 lines 11-13.<br><br>Page 424 lines 2-9.<br>See "data" in Fig. 7C. | Receiving said message causes said controller, 20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; ...<br><br>Then receiving a particular to-223 instruction from said control processor, 20A, causes controller, 20, to transmit particular instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated   |
| receiving a data transmission from                    |  |  |   |



| Claim Language                                   | Support to parent application filed November 3, 1981. |   | Support to instant specification.                |   |
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|  | Reference   | Language  | Reference  | Language  |
| a remote data source and                         | Column 18 lines 48-51.                                | Several separate news services transmit news on different channels carried on the multi-channel cable transmission to converter boxes, 222 and 201, and to signal processor, 200.   | Page 420 lines 21-29.                            | cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark.<br><br>Two remote stations--remote news-service-A station and remote news-service-B station--transmit, from geographically separate locations, two different broadcast print transmissions.<br>The intermediate transmission station of Fig. 6 receives and retransmits information the transmissions of said remote stations on digital data channels A and B, respectively, that are inputted to converter boxes, 222 and 201, and to signal processor, 200.   |
| passing said data transmission to said computer; | Column 18 lines 62-67.                                | In a predetermined fashion, either microcomputer, 205, or signal processor, 200, instructs tuner, 223, to set cable converter box, 222, to the proper channel, and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing. | Page 423 lines 11-13.<br><br>Page 424 lines 2-9. | Receiving said message causes said controller, 20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; ....<br><br>Then receiving a particular to-223 instruction from said control processor, 20A, causes controller, 20, to transmits particular instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark.<br><br>Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to |

| Claim Language  |                        | Support to parent application filed November 3, 1981.   |          | Support to instant specification. |   |
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|   |                        | Reference   | Language | Reference                         | Language  |
| processing said data transmission at said computer and                      | Column 19 lines 35-37. | Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day. |          | Page 449 lines 13-26.             | cause said unit, 256, to record said AT&T news item.)<br><br>Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. (Said remote station transmits said closing stock price data and causes specific subscriber stations to select and process their specific information of interest in the fashion in which remote news-service-A station transmitted the AT&T news item and caused selected stations to select and process, in their specific fashions, the information of said item.) |
| selecting one or more data of interest;                                     | Column 19 lines 39-41. | [Microcomputer, 205,] records those prices that relate to the stocks in its stored portfolio.   |          | Page 449 lines 13-20.             | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer.  |
| storing said selected one or more data of interest at said memory location; | Column 19 lines 39-41. | [Microcomputer, 205,] records those prices that relate to the stocks in its stored portfolio.   |          | Page 449 lines 13-20.             | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the  |



| Claim Language  |  | Support to parent application filed November 3, 1981. |  | Support to instant specification.    |  |
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|   |  | Reference   | Language   | Reference                            | Language   |
| selecting designated information to output,   |  | Column 19 lines 64-66.                                | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...   | Page 26 lines 1-8.                   | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.                    |
| said designated information being the product of processing at least a portion of said selected data; and |  | Column 18 lines 43-45.                                | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion.               | Page 419 line 34 to Page 420 line 2. | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.  |
|   |  | Column 19 line 67 to column 20 line 1.                | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...  | Page 26 lines 8-11.                  | TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...  |
|   |  | Column 19 lines 42-44.                                | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission. | Page 21 lines 20-24.                 | Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   |
|   |  | Column 19 lines 39-41.                                | [Microcomputer, 205,] records those prices that relate to the stocks in its stored portfolio.  | Page 449 lines 13-20.                | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. |
| outputting a simultaneous or  |  | Column 19 lines 67 to column 20 line 2.               | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated   | Page 451 line 3.                     | And the Fig. 1C combining is displayed.  |
|   |  |   |  | Page 26 lines 8-11.                  | TV monitor, 202M, then displays the image  |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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| sequential presentation of said mass medium program and said designated output. | Column 19 lines 59-60.                 | graphic.  |   | shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.                                       |
|   | Column 19 line 67 to column 20 line 1. | Then the host says, "And here is what your portfolio did."<br><br>The viewer then sees a microcomputer generated graphic of his own stocks' performance ... | Page 25 lines 33-34.<br><br>Page 26 lines 8-11. | Then the host says, "And here is what your portfolio did."<br><br>TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ... |

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| 48. The method of claim 47, further comprising the step of programming said receiver station to process a broadcast or cablecast transmission, | Column 8 lines 20-27. | The signal processor apparatus also has a controller device which includes programmable random access memory controller 20, read only memory 21 that may contain a unique digital code capable of identifying the signal processing apparatus uniquely, an automatic dialing device 24, and a telephone unit, 22. The controller, 20, governs the operation of all operating elements of the apparatus. | Page 33 lines 7-20.                  | Signal processor, 26, has a controller device which includes programmable RAM controller, 20; ROM, 21, that may contain unique digital code information capable of identifying signal processor, 26, and the subscriber station of said processor, 26, uniquely; an automatic dialing device 24; and a telephone unit, 22. ... Controller, 20, has a capacity for controlling the operation of all elements of the signal processor ...   |
|  | Column 9 lines 47-57. | The controller, 20, is programmed to sequence the local oscillator, 6, to select each desired frequency for a specific time interval in accordance with a predetermined pattern. This pattern may be selected in accordance with standard broadcast and cablecast practices known to exist on that transmission line or frequency.  | Page 248 line 17 to page 249 line 5. | Signal processor, 200, is preprogrammed with information that identifies each cable and over-the-air (hereinafter, "wireless") transmission or frequency in the locality of the subscriber station of Fig. 3 as well as the standard broadcast and cablecast practices that apply on said transmissions and frequencies ... In a predetermined fashion, controller, 20, controls oscillator, 6, to sequence local oscillator, 6, in the pattern: cable channel 2, cable channel 4, cable channel 7, cable channel 13, wireless channel 5, wireless channel 9, wireless channel 13, then to repeat said pattern. |

| Claim Language | Reference  | Language | Reference                                    | Support to instant specification. Language   |
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|                |  |          | <p>Page 257 line 24 to page 258 line 19.</p> | <p>Said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 9. Automatically oscillator, 6, causes mixer, 3, to select the frequency of channel 9 and input said frequency of interest, at a fixed frequency, to decoder, 30 ...</p> <p>Controller, 20, has capacity for keeping a track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13.</p> |
|                | <p>The local oscillator, being thus sequenced, will allow each signal decoder, 30 and 40, to receive a particular frequency at a particular time interval.</p> |          | <p>Page 257 line 24 to page 258 line 19.</p> | <p>Said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 9. Automatically oscillator, 6, causes mixer, 3, to select the frequency of channel 9 and input said frequency of interest, at a fixed frequency, to decoder, 30 ...</p> <p>Controller, 20, has capacity for keeping a track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13.</p> |
|                |  |          | <p>Page 265 line 27 to Page 266 line 21.</p> | <p>Said radio-detection-complete information causes ... controller, 20, to cause oscillator, 6, to cause the selection of the next frequency in the predetermined radio frequency selection</p>  |

| Claim Language |                       | Support to parent application filed November 3, 1981   |          | Support to instant specification. |  |
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|                |                       | Reference  | Language | Reference                         | Language   |
|                |                       |  |          |                                   | <p>pattern: 99.0 MHz. Automatically oscillator, 6, causes mixer, 2, to select said frequency and input it, at a fixed frequency, to decoder, 40 ...</p> <p>After determining, in a predetermined fashion, that a particular predetermined period of time has elapsed from the input of said 99.0 MHz frequency to decoder, 40, controller, 20, ... causes oscillator, 6, to cause the selection of the next frequency in the predetermined radio frequency selection pattern: 100.0 MHz.</p> <p>Example #5 begins with the embedding and transmitting, at the remote station that originates the "Wall Street Week" broadcast, of the first message of the "Wall Street Week" program which is the message of the first combining synch command.</p> <p>Receiving said embedded information causes the binary SPAM information of said first command, with error correcting information, to be detected at detector, 34; ...</p> <p>... said information to radio decoder, 42, which decodes the the embedded signal information of said command and transmits said signal information to digital detector, 43, which detects the binary information with error correcting bit information of said command and transfers said binary and bit information to controller, 44.</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46.</p> <p>Fig. 2 shows one embodiment of a signal processor. Said processor, 26, is configured for simultaneous use with a cablecast input that conveys both television and radio</p> |
|                |                       | This will define the timing of the composite outputs of the digital detectors, 34, 37, and 38 in FIG. 2A, and 43 in FIG. 2B. |          | Page 250 lines 13-17.             |  |
|                |                       |  |          | Page 251 lines 8-11.              |  |
|                |                       |  |          | Page 263 lines 19-24.             |  |
|                |                       |  |          | Page 37 lines 26-28.              |  |
|                | Column 6 lines 23-30. | A signal processor apparatus for simultaneous use with a cablecast input that conveys both television and radio              |          | Page 29 lines 4-15.               |  |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |
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|  | Reference   | Language   | Reference  | Language  |
| select a datum communicated in said broadcast or cablecast transmission, and | Column 9 lines 57-63.                                 | <p>programming and a broadcast television input is shown in Figure 1. As shown, the input signals are the entire range of frequencies or channels transmitted on the cable and the entire range of broadcast television transmissions available to a local television antenna of conventional design.</p> <p>The [controller, 20,] will control buffer/comparator, 8, to discard received duplicate and partial signals, to mark signals with correct channel identifiers, to transfer signals to decrypter, 10, and processor or monitor, 12, as required, and to perform such other functions as buffer/comparator, 8, performs.</p> | <p>Page 146 line 31 to page 147 line 3.</p> <p>Page 258 lines 17-25.</p> <p>Page 260 lines 5-13.</p> | <p>programming and a broadcast television input. ... The inputted information is the entire range of frequencies or channels transmitted on the cable and the entire range of broadcast television transmissions available to a local television antenna of conventional design.</p> <p>Said failures to match cause the controllers, 20, of said stations automatically ... to cause said buffer/comparators, 8, to discard all received information of said second message; and to cause ... said buffer/comparators, 8, to commence processing in the conventional fashion.)</p> <p>... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13. Automatically, oscillator, 6, causes mixer, 3, to select the frequency of channel 13 and input said frequency to decoder, 30. Controller, 20, then transmits a particular preprogrammed wireless-13 instruction to said control processor, 39J, that informs said processor, 39J, wireless channel 13 is inputted to decoder, 30.</p> <p>... commence transferring information from control processor, 39J, to buffer/comparator, 8, then to transmit a message that consists of binary information of a "00" header then the execution segment information of the pseudo command then a meter-monitor segment containing said monitor information in RAM (including the associated channel mark and the format information of said information) then any padding bits required to end said message. (Hereinafter, said message is called the "3rd-old-program-message (#5)".)</p> <p>Then said decrypt-with-J instructions cause</p> |
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| Claim Language                  | Support to parent application filed November 3, 1981. |  | Support to instant specification. |   |
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|                                 | Reference   | Language   | Reference                         | Language  |
| communicate said selected datum | Column 9 lines 65-68.                                 | [Controller, 20] instructs processor or monitor, 12, how to identify what signals to pass externally and where to pass them and what signals to transfer to buffer/comparator, 14. | Page 147 lines 29-31.             | controller, 20, to activate the output capacity of buffer/comparator, 8, that outputs to decryptor, 10;   |
|                                 |   |  | Page 149 lines 17-20.             | Next said decrypt-a-00-header-message instructions cause controller, 20, to cause buffer/comparator, 8, to transfer to decryptor, 10, a quantity of signal words of said binary information of the second message ...   |
|                                 |   |  | Page 149 lines 27-29.             | Decryptor, 10, commences receiving said information, decrypting it using said key J information and transferring it to controller, 12, ...  |
|                                 |   |  | Page 149 lines 8-16.              | Then said decrypt-a-00-header-message instructions cause controller, 20, to transmit to controller, 12, a particular <i>transfer-decrypted-message instruction</i> and particular decryption mark information of key J that identifies J as the decryption key.<br>Receiving said instruction and information causes controller, 12, to execute particular preprogrammed <i>transfer-and-meter instructions</i> then record said mark of key J at particular decryption-mark-@12 register memory. |
|                                 |   |  | Page 150 lines 7-9.               | Under control of said <i>transfer-and-meter instructions</i> , controller, 12, commences receiving decrypted information of the second message from decryptor, 10.  |
|                                 |   |  | Page 150 lines 16-21.             | Automatically controller, 12, processes said information of the second message of example #2 as a SPAM command. Receiving the header and execution segment causes controller, 12, to determine that said message is addressed to URS microcomputers, 205, and to transfer said message accordingly.<br><br>Receiving said complete-transfer-phase   |

| Claim Language        | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference  | Support to instant specification.<br>Language  |
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| <p>to a computer.</p> | <p>Column 18 lines 59-62.</p>                                      | <p>When [signal processor, 200] identifies a signal of interest, it relays that information and the channel identifier, in this illustration, to microcomputer, 205.</p> | <p>Page 152 line 18 to page 153 line 1.</p> <p>Page 422 line 33 to Page 423 line 10.</p> | <p>instruction causes controller, 12, to cease transferring information, under control of said transfer-and-meter instructions, to deactivate all output ports, and to commence executing the meter instructions of said transfer-and-meter instructions. Said meter instructions cause controller, 12, to ... transfer to buffer/comparator, 14, particular header identification information that identifies controller, 12, as the source of said transfer the information recorded at said SPAM-meter memory then the information recorded at said decryption-mark- @12 register memory, which information is the decryption mark of key J. (Hereinafter, said meter information generated by the second combining synch command in example #2 is called the "2nd meter information (#2).")</p> <p>...cause said controller, 39, to load the binary information of "T" ... of said message at particular working register memory and determine that the information at said memory matches the aforementioned binary information of "T" that is among the news-items-of-interest information ... Determining a match causes said controller, 39, to transmit said message, with channel mark information that identifies the particular channel in which said message was embedded, to said controller, 20, via control information transmission means and to continue functioning in the fashion of example #5.</p> |



| Claim Language   |   | Support to parent application filed November 3, 1981.  |                      | Support to instant specification.   |   |
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|  |   | Reference  | Language             | Reference   | Language  |
|  |   |  | <b>upon command.</b> | Page 44 lines 14-17.<br><br>Page 26 lines 20-28.  | A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions.<br><br>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synchronizing command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synchronizing command ...  |
| inputting a subscriber command at said receiver station; and | <i>In General</i><br>Column 17 lines 39- 44.  | Signal processor apparatus have the ability to identify instruction and information signals in one or more inputted television and radio programming transmissions, identify and discriminate among one or more pieces of external equipment to which such signals are <b>addressed</b> , and transfer such signals to such equipment as <b>directed</b> . |                      | <i>In General</i><br>Page 15 lines 16-23.<br><br>Page 34 lines 24-26.<br><br>Page 44 lines 14-15.<br><br>Page 95 lines 18-21. | The frequencies may convey television, radio, or other programming transmissions....The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information; ...<br><br>... identifies the particular apparatus to which said signals are <b>addressed</b> , and outputs said signals to said apparatus ...<br><br>A command is an instance of signal information that is <b>addressed</b> to particular subscriber station apparatus and that ...<br><br>Receiving the header and execution segment of said first message causes controller, 39, to determine that said message is <b>addressed</b> to URS microcomputers, 205, and to transfer said message to microcomputer, 205. |
|  | <i>Specifically</i><br>Column 19 lines 63-64. | This signal is identified by decoder, 203, and transferred via <b>processor, 204</b> , to microcomputer, 205.  |                      | <i>Specifically</i><br>Page 26 lines 1-2.   | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...   |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |  |
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|  | Reference   | Language   | Reference  | Language   |
|  |   |  | Page 37 line 26 to page 38 line 8.   | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.  |
| detecting at said receiver station a command communicated from a remote station. | Column 19 lines 63-64.                                | This signal is identified by <b>decoder, 203</b> , and transferred via processor, 204, to microcomputer, 205.  | Page 26 lines 1-2.   | Said signal is identified by <b>decoder, 203</b> ; transferred to microcomputer, 205; and ...  |
|  | Column 19 lines 24-25.                                | ... microcomputer, <b>205</b> , may instruct tuner, <b>214</b> , to switch box, <b>201</b> , to channel X...   | Page 37 line 26 to page 38 line 8.   | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.  |
|  | Column 18 lines 48-51.                                | Several separate news services transmit news on different channels carried on the multi-channel cable transmission to converter boxes, <b>222</b> and <b>201</b> , and to signal processor, <b>200</b> . | Page 295 lines 6-8.<br><br>Page 439 lines 9-15.<br><br>Page 420 lines 21-29. | Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its ...<br><br>... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;...<br><br>Two remote stations--remote news-service-A station and remote news-service-B station--transmit, from geographically separate locations, two different broadcast print transmissions.<br>The intermediate transmission station of Fig. 6 receives and retransmits information the |

| Claim Language | Support to parent application filed November 3, 1981. |          |
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|  |  |  | transmissions of said remote stations on digital data channels A and B, respectively, that are inputted to converter boxes, 222 and 201, and to signal processor, 200. |
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| 50. The method of claim 47, wherein said mass medium programming comprises one of television programming, radio programming, and print programming, and | Column 19 lines 27-29. | ... and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week."  | Page 445 line 24 to page 446 line 1.                            | ... instructions causes controller, 20, to switch power on to monitor, 202M, and commence transferring the television output transmission of microcomputer, 205, to said monitor, 202M; ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, and to tune monitor, 202M, in a predetermined fashion.<br><br>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...<br><br>Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.<br><br>The present invention consists of an integrated system of methods and apparatus for communicating programming. The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming as well as combined medium programming.<br><br>Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so |
|   | Column 19 lines 1-4.   | In the same fashion, microcomputer, 205, may also instruct signal processor, 200, to monitor single or multiple television channels and/or radio channels for programming of interest to play or record. | Page 419 line 34 to page 420 line 2.<br><br>Page 11 lines 5-10. |   |
|   | Column 18 lines 65-67. | ... and microcomputer, 200, may record the information in memory or transfer it to   | Page 426 lines 10-18.   |   |

| Claim Language                       |                                | Support to parent application filed November 3, 1981.  | Support to instant specification.   |
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| a portion of multimedia programming. | printer, 221, for printing ... | FIG 6C can also illustrate how programming delivered at different times to one place can be co-ordinated to give a multimedia presentation at one time in one place. | doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication to link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.)  |
|                                      | Column 19 lines 31-34.         | Page 18 lines 24-27.<br><br>page 450 line 27 to page 451 line 11.  | Fig. 7C is a block diagram of signal processing apparatus and methods selecting receivable information and programming and controlling combined medium, multi-channel presentations.<br><br>(To accomplish all this has required only that the subscriber of microcomputer, 205, [and other subscribers at other stations] cause the installation and connection of the apparatus shown in the figures of this submission, especially Fig. 7 (and 7C); caused his microcomputer, 205, to be preprogrammed as described above; and preinformed microcomputer, 205, of his wish to view said "Wall Street Week" program by causing the aforementioned select-WSW information to be recorded at said microcomputer, 205.)<br>Then the combined medium combining process described above in "One Combined Medium" and in examples #1, #2, #3, #4, etc. commences. And the Fig. 1C combining is displayed.<br>But the combining of Fig. 1C is just part of a larger process.<br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first. |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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| 51. The method of claim 50, wherein said step of selecting designated information is performed in response to an instruct signal communicated from said programming source, said method further comprising the step of | Column 19 lines 60-66. | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, <b>203</b> , and transferred via processor, <b>204</b> , to microcomputer, <b>205</b> . This signal instructs microcomputer, <b>205</b> , to transmit the first overlay to TV set, <b>202</b> , ... | Page 25 line 33 to page 26 line 2..            | Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, <b>203</b> ; transferred to microcomputer, <b>205</b> ; and executed ...<br><br>In each decoder, the controller, <b>39</b> , <b>44</b> , or <b>47</b> , receives detected digital information from the relevant detector or detectors, <b>34</b> , <b>37</b> , <b>38</b> , <b>43</b> , and <b>46</b> . Upon receiving any given instance of signal information, controller, <b>39</b> , <b>44</b> , or <b>47</b> , is preprogrammed to process said information automatically. Controller, <b>39</b> , is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
|  | Column 19 lines 42-44. | Microcomputer, <b>205</b> , is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   | Page 26 lines 4-8.<br><br>Page 21 lines 20-24. | Said signal instructs microcomputer, <b>205</b> , at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, <b>202M</b> .<br><br>Microcomputer, <b>205</b> , is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.  |



| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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| <p>52. The method of claim 50, wherein at least one of said steps of (a) processing said data transmission at said computer and selecting one or more data of interest, (b) selecting designated information, and (c) outputting a simultaneous or sequential presentation of said mass medium program and said designated information, is performed in accordance with an instruct signal communicated from said programming source, said method further comprising the step of</p> | Column 19 lines 42-53. | <p>Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.</p> <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205.</p> | <p>Page 450 lines 31-32.</p> <p>Page 21 lines 20-24.</p> <p>Page 451 lines 6-7.</p> <p>Page 23 line 35 to page 24 line 4.</p> | <p>... caused his microcomputer, 205, to be preprogrammed as described above; ...</p> <p>Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.</p> <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.</p> |
|  |                        | <p>These signals instruct microcomputer, 205,</p>   | <p>Page 37 line 26 to page 38 line 8.</p>   | <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p>   |
|  |                        |   | <p>Page 24 lines 5-16.</p>  | <p>Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk</p>  |
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| Claim Language | Support to parent application filed November 3, 1981. | Reference | Language | Support to instant specification.   | Language |
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|                |   |           |          | drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set."   |          |
|                |   |           |          | ... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.  |          |
|                |   |           |          | Microcomputer, 205, is a conventional microcomputer system ... for generating computer graphic information; for receiving a composite video transmission; for combining said graphic information onto the video information of said transmission by graphic overlay techniques, well known in the art; and for outputting the resulting combined information to a TV monitor, 202M, in a composite video transmission. ... TV monitor, 202M, has capacity for receiving composite video and audio transmissions and for presenting a conventional television video image and audio sound. |          |
|                |   |           |          | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.  |          |
|                |   |           |          | A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a ...   |          |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  |  | Support to instant specification.  |   |
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| programming said receiver station to<br><br>locate or<br><br>identify | Column 18 lines 45-47. | In this example, microprocessor, <b>205</b> , is programmed to hold a portfolio of stocks ...  | Page 26 lines 20-28.                     | The microprocessor, <b>205</b> , of the station of Fig. 7 and 7C, is preprogrammed to hold records of a portfolio of stocks ...  | (Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes a subscriber station apparatus to execute a combining operation in synchronization is called a "combining synchron command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synchron command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.) |
|   | Column 18 lines 58-59. | Signal processor, <b>200</b> , scans sequentially all channels.  |  |  |   |
|   | Column 18 lines 59-62. | When [signal processor, <b>200</b> ] identifies a signal of interest, it relays that information and the channel identifier, in this illustration, to microcomputer, <b>205</b> .          |  |  |   |
|   | Column 19 lines 17-23. | ... processor or monitor, <b>12</b> , which reacts, in a predetermined fashion by passing also externally to microcomputer, <b>205</b> , all signals that it passes to buffer/ comparator, |  |  |   |
| said instruct signal.   |                        |  | Page 422 line 33 to<br>Page 423 line 10. | ... cause said controller, <b>39</b> , to load the binary information of "I" ... of said message at particular working register memory and determine that the information at said memory matches the aforementioned binary information of "I" that is among the news-items-of-interest information ... Determining a match causes said controller, <b>39</b> , to transmit said message, with channel mark information that identifies the particular channel in which said message was embedded, to said controller, <b>20</b> , via control information transmission means and to continue functioning in the fashion of example #5. | In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, <b>200</b> , ...   |

| Claim Language | Support to parent application filed November 3, 1981. |   | Support to instant specification.   |  |
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|                | Reference   | Language  | Reference   | Language   |
|                |   | <p>14. Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X.</p> | <p>Page 267 lines 20-28 from example #5.</p> <p>Page 436 line 9 to page 437 line 3.</p> | <p>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>Receiving said Select-WSW-Program- Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW information and said ... enable-WSW-on-CC13...</p> <p>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW -on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>... to receive the transmission of cable</p> |
|                |   |   | Page 439 lines 14-15.   |  |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|  | Column 19 lines 43-44. | ... instruction signals embedded in the "Wall Street Week" programming transmission. | Page 21 lines 23-24. | channel 13; ...<br>... instruction signals embedded in the "Wall Street Week" programming transmission. |
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| 53. The method of claim 47, wherein said step of storing occurs before | Column 19 lines 35-41. | Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day. It may receive these directly or it may automatically query a data service for them in a predetermined fashion. It records those prices that relate to the stocks in its stored portfolio. | Page 449 lines 13-35. | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. (Said remote station transmits said closing stock price data and causes specific subscriber stations to select and process their specific information of interest in the fashion in which remote news-service-A station transmitted the AT&T news item and caused selected stations to select and process, in their specific fashions, the information of said item.) Alternatively, microcomputer, 205, is caused in a predetermined fashion (for example, by a SPAM message a given transmission monitored by signal processor, 200, in any of the above described fashions) automatically to telephone a remote data service computer, by means of network, 262, in a fashion well known in the art, and to cause said remote computer to select and transmit the particular closing price datum or data of the stock or stocks of the portfolio of said microcomputer, 205, thereby causing said microcomputer, 205, to record said datum or data in a |
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| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.   |  |
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| the commencement of said step of receiving mass medium programming.  | Column 19 lines 45-46.                                | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ... | Page 451 lines 6-7.                 | predetermined fashion.<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...  |
| 54. The method of claim 47, further comprising the step of generating one or more receiver specific data to serve as | Column 19 lines 48-53.                                | These signals instruct microcomputer, 205, to                                       | Page 23 line 35 to page 24 line 16. | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions ... (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.") |
|  |   | generate several graphic video overlays, ...  | Page 451 lines 7-11.                | ... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.   |
|  |   | and to transmit these overlays to TV set, 202,                                      | Page 26 lines 4-8.                  | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |
|  |   | upon command.   | Page 44 lines 14-17.                | A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions.  |

| Claim Language   |                        | Support to parent application filed November 3, 1981.  |          | Support to instant specification.  |  |
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| a source of said designated information.                                   | Column 19 lines 64-66. | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...   |          | Page 26 lines 20-28.<br><br>Page 26 lines 1-8.   | (Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synchron command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synchron command ...<br><br>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. |
|  |                        |  |          |  |  |
| 55. A method of controlling a plurality of receiver stations each of which | Column 19 lines 60-63. | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. |          | Page 59 lines 29-33.<br><br>Page 25 line 34 to page 26 line 1.<br><br>Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.<br><br>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.<br><br>The second message is of the information associated with the second combining synchron command. Said second command has a "00" header, an execution segment, and a meter-monitor ...   |
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| Support to parent application filed November 3, 1981.     |                        | Support to instant specification.  |  |
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| includes at least one of a television and radio receiver, | Column 17 lines 47-53. | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. | 20-28, page 89 lines 3-6, and page 90 lines 4-11.<br><br>Page 390 lines 30-35.   |
|   | Column 19 lines 28-29. | ...and tuner, 215, to tune appropriately to "Wall Street Week."  | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.<br><br>Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.<br><br>... and to tune monitor, 202M, in a predetermined fashion. |
| a signal detector,  | Column 19 lines 63-64. | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.  | In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio....<br><br>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...  |
|   |                        |  | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.  |



| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.                            |  |
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| a processor, and  | Column 19 lines 63-64.                                | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.  | Page 26 lines 1-2.<br><br>Page 37 line 26 to page 38 line 8. | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
| with each said receiver station adapted to detect the presence of at least one control signal and | Column 19 lines 63-64.                                | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.  | Page 26 lines 1-2.<br><br>Page 37 line 26 to page 38 line 8. | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
| programmed to process downloadable code, said method of controlling comprising the steps of:      | Column 19 lines 42-44.                                | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission. | Page 21 lines 20-24.   | Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   |
| receiving at a transmitter station  | Column 19 lines 60-62.                                | At this point, an instruction signal is generated in the television studio originating the programming ...   | Page 59 lines 29-33.   | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The Information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.   |

| Support to parent application filed November 3, 1981.         |  | Support to instant specification.   |  |
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| Claim Language  | Reference  | Reference   | Language   |
| downloadable code which is effective at a receiver station to | Column 19 lines 46-53.   | <p>Page 25 lines 34-35.</p> <p>Page 90 lines 4-7. Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11.</p> <p>Page 23 line 35 to page 24 line 16.</p> <p>Page 44 lines 14-17.</p> | <p>At this point, an instruction signal is generated at said program originating studio, ...</p> <p>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor segment of five fields and addresses URS microcomputers, 205.</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a</p> |
|   | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, ... <b>upon command.</b> |   |  |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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| select and store one or more data for subsequent processing or presentation during the course of a mass medium program, | Column 19 lines 48-53. | These signals instruct microcomputer, <b>205</b> , ...<br>... to generate several graphic video overlays, ...<br><br>... which microcomputer, <b>205</b> , has the means to generate and transmit and TV set, <b>202</b> , has the means to receive and display, and to ... | Page 26 lines 20-28.                | (Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)<br><br>Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...<br><br>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first. |
|   |                        |   | Page 24 lines 5-16.                 |  |
|   |                        |   | Page 451 lines 7-11.                |  |
|   |                        |   | Page 19 line 29 to page 20 line 20. | Microcomputer, 205, is a conventional microcomputer system ... for generating computer graphic information; for receiving a composite video transmission; for combining said graphic information onto the video overlay techniques, well known in the art; and for outputting the resulting combined information to a TV monitor, 202M, in a composite video transmission. ... TV monitor, 202M, has capacity for receiving composite video and audio transmissions and for presenting a conventional television video image and audio sound.  |
|   |                        | ... transmit these overlays to TV set, <b>202</b> ,...  | Page 26 lines 4-8.                  | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and  |

| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.   |  |
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|   | Column 19 line 53-56.                                 | Subsequently in the program, the host says, "Here is what the Dow Jones Industrials did is the past week," and a studio generated graphic is pictured.   | Page 25 lines 26-33.  | transmit the combined information to TV monitor, 202M.<br><br>During this time the program may show the so-called "talking head" of the host as he describes the behavior of the stock market over the course of the week. Then the host says, "Now as we turn to the graphs, here is what the Dow Jones Industrials did in the week just past," and a studio generated graphic is transmitted. Fig. 1B shows the image of said graphic as it appears on the video screen of TV monitor, 202M. |
| said downloadable code addressed at each of said plurality of receiver stations to  | Column 19 lines 67 to column 20 line 2.               | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.  | Page 451 line 3.<br><br>Page 26 lines 8-11.                                   | And the Fig. 1C combining is displayed.<br><br>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.   |
| said processor;   | Column 7 lines 54-58.<br><br>Column 19 lines 42-43.   | If a signal or signals are to be passed externally, processor unit, 12, identifies, in a pre-determined fashion, the external equipment to which the signal or signals are addressed and passes them to appropriate jack ports for external transmission.<br><br>Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to ... | Page 31 lines 14-18.<br><br>Page 450 lines 31-32.<br><br>Page 21 lines 20-23. | If a signal or signals are to be transferred externally, in a predetermined fashion controller, 12, identifies the external apparatus to which the signal or signals are addressed and transfers them to the appropriate port or ports for external transmission.<br><br>... caused his microcomputer, 205, to be preprogrammed as described above; ...<br><br>Microcomputer, 205, is preprogrammed to ... respond ... to ...  |
| transferring said downloadable code from said transmitter station to a transmitter; | Column 19 lines 60-63.                                | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission.   | Page 59 lines 29-33.  | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially  |



| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.   |   |
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| receiving said at least one control signal at said transmitter station,                    | Column 19 lines 60-62.                                | At this point, an instruction signal is generated in the television studio originating the programming ...  | Page 451 lines 7-9.<br><br>Page 59 lines 29-33.   | ... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to ...<br><br>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The Information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.<br><br>At this point, an instruction signal is generated at said program originating studio, ...  |
| said control signal operative at a receiver station to execute said downloadable code; and | Column 19 line 64 to column 20 line 1.                | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, for as long as it receives the same instruction signal from processor, 204. The viewer then sees a microcomputer generated graphic of his own stocks' performance ... | Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11.<br><br>Page 26 lines 1-2.<br><br>Page 37 lines 26 to page 38 line 8. | The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor segment of five fields and addresses URS microcomputers, 205.<br><br>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|  |                        |   | <p>art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance</p> <p>And the Fig. 1C combining is displayed.</p> |   |
| transferring said at least one control signal from said transmitter station to said transmitter, and | Column 19 lines 60-65. | <p>At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, ...</p> | <p>Page 26 lines 4-11.</p> <p>Page 451 line 3.</p>   | <p>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or</p> |

| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference   | Support to instant specification.<br>Language  |
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| <p>transmitting an information transmission comprising said downloadable code and said at least one control signal.</p> | <p>Column 19 lines 46-53.</p>                                      | <p>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, ... <b>upon command</b>.</p> | <p>Page 26 line 4.<br/><br/>Page 23 line 35 to page 24 line 16.</p> | <p>fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, ...</p> <p>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the</p> |
|   |  |   | <p>Page 44 lines 14-17.<br/><br/>Page 26 lines 20-28.</p>           |  |



| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference  | Support to instant specification.<br>Language  |
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|                | <p>Column 19 lines 60-66.</p>                                      | <p>At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ...</p> | <p>Page 25 line 33 to page 26 line 2..</p> <p>Page 37 line 26 to page 38 line 8.</p> <p>Page 26 lines 4-8.</p> | <p>above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)</p> <p>Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...</p> <p>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.</p> |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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| 56. The method of claim 55, wherein said downloadable code or some identification data designating said downloadable code are embedded in a television signal. | Column 19 lines 60-63. | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. | Page 59 lines 29-33.<br><br>Page 25 line 34 to page 26 line 1.<br><br>Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11. | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.<br><br>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.<br><br>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ... |
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| 57. The method of claim 55, wherein a television program is displayed at one or more of said receiver stations and said downloadable code programs said processor to | Column 19 lines 28-29.<br><br>Column 19 lines 46-53. | ...and tuner, 215, to tune appropriately to "Wall Street Week."<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct | Page 445 line 35 to page 446 line 1.<br><br>Page 446 lines 17-21.<br><br>Page 23 line 35 to page 24 line 16. | ... and to tune monitor, 202M, in a predetermined fashion.<br><br>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio....<br><br>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to |
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| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Support to instant specification.<br>Reference  | Language  |
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| (a) output video, audio, or text in the context of said television program or | Column 19 lines 48-53.   | microcomputer, 205, ... upon command.   | <p>microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")</p> <p>Page 44 lines 14-17.</p> <p>Page 26 lines 20-28.</p> <p>Page 24 lines 5-16.</p> <p>Page 451 lines 7-11.</p>  |
|   |  | These signals instruct microcomputer, 205, ...<br>... to generate several graphic video | <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synchron command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synchron command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)</p> <p>Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...<br/>... the program instruction set in the first</p> |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.                            |   |
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| (b) to process a viewer response to said television program or |   | overlays, ...  | Page 19 line 29 to page 20 line 20.                          | message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.   |
|  |   | ... which microcomputer, 205, has the means to generate and transmit and TV set, 202, has the means to receive and display, and to ... |  | Microcomputer, 205, is a conventional microcomputer system ... for generating computer graphic information; for receiving a composite video transmission; for combining said graphic information onto the video information of said transmission by graphic overlay techniques, well known in the art; and for outputting the resulting combined information to a TV monitor, 202M, in a composite video transmission. ... TV monitor, 202M, has capacity for receiving composite video and audio transmissions and for presenting a conventional television video image and audio sound. |
|  | Column 19 lines 63-64.                                | ... transmit these overlays to TV set, 202,...   | Page 26 lines 4-8.   | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.  |
|  |   | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.                                  | Page 26 lines 1-2.<br><br>Page 37 line 26 to page 38 line 8. | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.                                      |
|  | Column 19 line 53-56.                                 | Subsequently in the program, the host says,  | Page 25 lines 26-33.   | During this time the program may show the   |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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| (c) to select information that supplements said television program content. | Column 19 lines 64-66.                                | "Here is what the Dow Jones Industrials did is the past week," and a studio generated graphic is pictured.  |  | so-called "talking head" of the host as he describes the behavior of the stock market over the course of the week. Then the host says, "Now as we turn to the graphs, here is what the Dow Jones Industrials did in the week just past," and a studio generated graphic is transmitted. Fig. 1B shows the image of said graphic as it appears on the video screen of TV monitor, 202M.   |
|   |   | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...  | Page 26 lines 1-8.   | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.  |
|   | Column 19 lines 48-53.                                | These signals instruct microcomputer, 205, ...<br>... to generate several graphic video overlays, ...<br>... which microcomputer, 205, has the means to generate and transmit and TV set, 202, has the means to receive and display, and to ... | Page 24 lines 5-16.<br><br>Page 451 lines 7-11.<br><br>Page 19 line 29 to page 20 line 20. | Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...<br>... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.<br><br>Microcomputer, 205, is a conventional microcomputer system ... for generating computer graphic information; for receiving a composite video transmission; for combining said graphic information onto the video information of said transmission by graphic overlay techniques, well known in the art; and for outputting the resulting combined information to a TV monitor, 202M, in a composite video transmission. ... TV monitor, 202M, has capacity for receiving composite video and audio transmissions and |

| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.   |  |
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|  |   | ... transmit these overlays to TV set, 202,...  | Page 26 lines 4-8.  | for presenting a conventional television video image and audio sound.<br><br>Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.  |
| 58. The method of claim 55, wherein said one or more control signals incorporate some of said downloadable code. | Column 19 lines 43-44.<br><br>Column 19 lines 46-53.  | ... instruction signals embedded in the "Wall Street Week" programming transmission.<br><br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, ... upon command. | Page 21 lines 23-24.<br><br>Page 23 line 35 to page 24 line 16.<br><br>Page 44 lines 14-17. | ... instruction signals embedded in the "Wall Street Week" programming transmission.<br><br>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.")<br><br>A command is an instance of signal information that is addressed to particular |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|  |  |  | <p>subscriber station apparatus and that causes said apparatus to perform a particular function or functions. A command is always constituted of at least a</p> <p>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)</p> |
|  |  |  | <p>Page 26 lines 20-28.</p>  |

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| <p>59. A method of gathering information on the use of</p> | <p>Column 15 lines 27-30.</p> | <p>FIG 5 illustrates methods for monitoring reception and operation which methods can be used to gather statistics on programing usage and associated uses of other data transmissions and equipment.</p> | <p>Page 312 line 33 to page 313 line 8.</p> <p>Page 28 lines 25-29.</p> | <p>Fig. 5 illustrates means and methods for monitoring receiver station reception and use of programming and modes of receiver station operation ... The means and methods facilitate the collection of statistics that identify not only what programming is received and displayed at given subscriber stations but also, for example, which local apparatus receives programming and which displays programming, how received programming is processed, what local apparatus is controlled in the course of processing ...</p> <p>[Signal processor 200 in Fig. 7 and elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage.</p> |
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| Claim Language   |                        | Support to parent application filed November 3, 1981.   |                                      | Support to instant specification.   |          |
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| a resource or  | Column 17 lines 21-24. | In this fashion, besides facilitating data gathering on how programming is used, signal processing apparatus and methods also permit the evaluation of how equipment is used. | Page 312 lines 33-35.                | Fig. 5 illustrates means and methods for monitoring receiver station reception and use of programming and <b>modes of receiver station operation</b> and exemplifies one embodiment....   |          |
| a signal at a receiver station, said receiver station having | Column 17 lines 13-16. | Every instruction or information signal transmitted from processor, 140, to microcomputer, 142, is also transmitted to signal processor, 130, ...                             | Page 315 line 30 to page 316 line 6. | Decoder, 203, has means for detecting SPAM information in any programming transmission inputted to its associated apparatus, microcomputer, 205, and not only for detecting and transferring to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message of said transmissions but also for inputting selected detected information to microcomputer, 205, and for controlling microcomputer, 205, in selected fashions. (Fig. 5 also shows that decoder, 203, has capacity for inputting detected information to signal processor, 200, and for receiving from and transferring control information to signal processor, 200.) |          |
| a processor, and a   | Column 17 lines 13-16. | Every instruction or information signal transmitted from processor, 140, to microcomputer, 142, is also transmitted to signal processor, 130, ...                             | Page 315 line 30 to page 316 line 6. | Decoder, 203, has means for detecting SPAM information in any programming transmission inputted to its associated apparatus, microcomputer, 205, and not only for detecting and transferring to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message of said transmissions but also for inputting selected detected information to microcomputer, 205, and for controlling microcomputer, 205, in selected fashions. (Fig. 5 also shows that decoder, 203, has capacity for inputting detected information to signal processor, 200, and for receiving from and transferring control information to signal processor, 200.) |          |
| controlled device, said receiver station                     | Column 17 lines 13-16. | Every instruction or information signal transmitted from processor, 140, to   | Page 315 line 30 to page 316 line 6. | Decoder, 203, has means for detecting SPAM information in any programming transmission  |          |



| Claim Language   |                        | Support to parent application filed November 3, 1981.   |   | Support to instant specification.   |  |
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| transferring said gathered information to a remote station, said method comprising the steps of: | Column 17 lines 16-17. | microcomputer, 142, is also transmitted to signal processor, 130, ...<br><br>... to be handled, recorded, and transmitted to a remote site with all other monitor information.  | Page 28 lines 25-35                               | inputted to its associated apparatus, microcomputer, 205, and not only for detecting and transferring to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message of said transmissions but also for inputting selected detected information to microcomputer, 205, and for controlling microcomputer, 205, in selected fashions. (Fig. 5 also shows that decoder, 203, has capacity for inputting detected information to signal processor, 200, and for receiving from and transferring control information to signal processor, 200.)<br><br>[Signal processor ... 200 in Fig. 7 ... and elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used, and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring said meter records automatically to one or more remote automated billing stations that account for programming and information consumption and bill subscribers and said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage. |  |
| identifying  | Column 15 lines 57-62. | The signals for which the decoders are monitoring are likely to be unique digital codes that may identify each programming or data unit received and the source of each. They may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission. | Page 315 lines 20-24.<br><br>Page 44 lines 26-32. | Each one of said decoders is preprogrammed to detect and transfer to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message in the transmission to which its associated apparatus is tuned.<br><br>Commands often contain meter-monitor segments. Said segments contain meter   |  |

| Support to parent application filed November 3, 1981. |   | Support to instant specification.  |   |
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|   |   | information and/or monitor information, and the information of said segments causes the subscriber station signal processor systems to assemble, record, and transmit meter records to remote billing stations and monitor records to remote ratings stations in fashions that are described more fully below.   |   |
|   |   | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br>... unique codes for programming; ... and unique codes that identify the sources and suppliers of computer data.<br>... origins of transmissions (eg., network source stations, broadcast stations, cable head end stations); dates and times ...  | Page 49 line 26 to Page 50 line 4.                |
|   |   | ... <b>monitor information that identifies what programming is available, ...</b>  | Page 28 lines 26-27.                              |
|   | Column 17 lines 17-21.<br><br>In a predetermined fashion, signal processor, 130, identifies and marks the source of signals as coming from a device, 139, monitoring signal usage rather than programming usage and viewership. | For example, in the case of the "Wall Street Week" program, transmitting the first and second SPAM messages of example #3 (which are not encrypted) will cause not only decoder, 203, to process the meter-monitor information of said messages and transmit the aforementioned 1st monitor information (#3) and 2nd monitor information (#3), via the monitor information bus means of Fig. 5, to onboard controller, 14A.<br><br>Under control of said instructions, said match causes control processor, 39J, ... to transfer to said buffer/comparator, 14, header information that identifies a transmission of monitor information then particular decoder-203 information that is the source mark of said decoder, 203, ... then all of the received binary information of said first | Page 322 lines 19-26.<br><br>Page 174 lines 4-23. |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification. |   |
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|  | Reference   | Language   | Reference                         | Language  |
| a resource to select for subsequent presentation of a mass medium program or | Column 19 lines 23-29.                                | ... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X and may instruct control system, 220, to turn video recorder, 217, on and record "Wall Street Week," and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week." | Page 437 lines 1-6.               | message that is recorded at said SPAM-input-signal memory; ... (Said received information is complete information of the first combining synch command, and said information transmitted to buffer/comparator, 14, is called, hereinafter, the "1st monitor information (#3).")<br><br>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, 20.<br>Receiving said please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ...<br><br>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its ...<br><br>... to cause selected apparatus of said station-cable converter box, 201, ... to receive the transmission of cable channel 13;<br><br>...<br><br>... instructions causes controller, 20, ... to switch power on to video recorder/player, 217, ...<br><br>... controller, 20, ... causes recorder/player, 217, to record said information of the "Wall Street Week" program.<br><br>... instructions causes controller, 20, to switch power on to monitor, 202M, ...<br>Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said |

| Claim Language                          | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |
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|   | Reference   | Language   | Reference  | Language  |
| a control signal which                  | Column 19 lines 60-62.                                | At this point, an instruction signal is generated in the television studio originating the programming ... | <p>Page 445 line 35 to page 446 line 1.</p> <p>Page 446 lines 17-21.</p> <p>Page 59 lines 29-33.</p> <p>Page 25 lines 34-35.</p> <p>Page 90 lines 4-7.</p> <p>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11.</p> <p>Page 26 lines 1-8.</p> | <p>communications link, that causes decoder, 145, to switch power on to monitor, 202M, ...</p> <p>... and to tune monitor, 202M, in a predetermined fashion.</p> <p>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ...</p> <p>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The Information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.</p> <p>At this point, an instruction signal is generated at said program originating studio, ...</p> <p>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor segment of five fields and addresses URS microcomputers, 205.</p> <p>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the</p> |
| is effective to select information from | Column 19 lines 64-66.                                | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...                 |  |   |

| Claim Language   |  | Support to parent application filed November 3, 1981.  |   | Support to instant specification.                                  |  |
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|  |  | Reference  | Language  | Reference  | Language   |
| one or more processed and stored data for presentation during the course of a mass medium program; | Column 4 lines 17-18.                  | They may appear in various and varying locations.  | graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.<br><br>They may appear in various and varying locations.<br><br>TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...<br><br>Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.<br><br>Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. | Page 14 line 6.  | In Fig. 5, decoder, 203, which is part of the signal processor system of the station of Fig. 5, not only monitors the operation of its associated apparatus, microcomputer, 205, but also controls said apparatus, ...<br><br>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...<br><br>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) |
|  | Column 19 line 67 to column 20 line 1. | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...  |   | Page 26 lines 8-11.  |  |
|  | Column 19 lines 42-44.                 | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   |   | Page 21 lines 20-24.   |  |
|  | Column 19 lines 39-41.                 | [Microcomputer, 205,] records those prices that relate to the stocks in its stored portfolio.  |   | Page 449 lines 13-20.  |  |
| monitoring said resource or  | Column 17 lines 10-12.                 | Signal divider, 139, illustrates another type of monitoring that signal processing apparatus and methods can facilitate.   | In Fig. 5, decoder, 203, which is part of the signal processor system of the station of Fig. 5, not only monitors the operation of its associated apparatus, microcomputer, 205, but also controls said apparatus, ...<br><br>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...<br><br>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5)  | Page 315 lines 25-28.  | In Fig. 5, decoder, 203, which is part of the signal processor system of the station of Fig. 5, not only monitors the operation of its associated apparatus, microcomputer, 205, but also controls said apparatus, ...<br><br>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...<br><br>All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) |
|  | Column 19 lines 17-23.                 | ... processor or monitor, 12, which reacts, in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. Analyzing these identifier signals in a predetermined fashion, microcomputer, |   | Page 435 lines 16-18.<br><br>Page 267 lines 20-28 from example #5. |  |

| Claim Language | Support to parent application filed November 3, 1981.                           | Support to instant specification.   |
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| Reference      | Language  | Reference   |
|                | <p>205, determines that "Wall Street Week" is being televised on channel X.</p> | <p>and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>Receiving said Select-WSW-Program-Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW information and said ... enable-WSW-on-CC13...</p> <p>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW -on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>... to receive the transmission of cable channel 13; ...</p> |
|                |   | <p>Page 436 line 9 to page 437 line 3.</p>  |
|                |   | <p>Page 439 lines 14-15.</p>  |

| Support to parent application filed November 3, 1981. |                        | Support to instant specification.  |                                       |
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| Claim Language  | Reference              | Language   | Reference                             |
| said control signal;                                  | Column 15 lines 27-30. | FIG 5 illustrates methods for monitoring reception and operation which methods can be used to gather statistics on programming usage and associated uses of other data transmissions and equipment.  | Page 312 line 33 to page 313 line 8.  |
|   | Column 19 lines 17-23. | ... processor or monitor, 12, which reacts, in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/comparator, 14. Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X.   | Page 28 lines 25-29.                  |
|   |                        | Fig. 5 illustrates means and methods for monitoring receiver station reception and use of programming and modes of receiver station operation ... The means and methods facilitate the collection of statistics that identify not only what programming is received and displayed at given subscriber stations but also, for example, which local apparatus receives programming and which displays programming, how received programming is processed, what local apparatus is controlled in the course of processing ... |                                       |
|   |                        | [Signal processor 200 in Fig. 7 and elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage.   |                                       |
|   |                        | In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...  |                                       |
|   |                        | All eight of said messages are commands. The 1st- and 3rd-new- program-message (#5) and the 1st-new-radio-program-message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)                         | Page 435 lines 16-18.                 |
|   |                        | Receiving said Select-WSW-Program- Unit message causes decoder, 203, ... to input ... the information segment of said message to   | Page 267 lines 20-28 from example #5. |

| Claim Language  |                       | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |   |
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| Reference   |                       | Language  |   | Reference  |   |
| Language  |                       |   |   | Language   |   |
| storing a record of the use of said resource or said control signal from said step of monitoring; and | Column 7 lines 65-67. |   | <p>Page 436 line 9 to page 437 line 3.</p> <p>Page 439 lines 14-15.</p> <p>Page 31 line 30 to page 32 line 6.</p> | <p>the CPU of microcomputer, 205, ... The information so inputted is the aforementioned determine-whether- to-select instructions that contain said particular specific-WSW information and said ... enable-WSW-on-CC13...</p> <p>Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>... to receive the transmission of cable channel 13; ...</p> | <p>Buffer/comparator, 14, receives signal information that is meter information and/or monitor information ... organizes said received information into meter records and/or monitor records (called, in aggregate, hereinafter, "signal records") ... and transmits said signal records to a digital recorder, 16, and/or to one or more remote sites. ... has</p> |
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| Claim Language |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.  |   |
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| Reference      |                        | Language  |  | Reference  |   |
| Language       |                        | Language  |  | Language   |   |
|                | Column 19 lines 18-20. | [processor or monitor, 12, reacts] ... in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/ comparator, 14. |  | <p>Page 435 lines 16-18.</p> <p>Page 267 lines 20-28 from example #5.</p> <p>Page 268 line 28 to page 269 line 12 from example #5.</p> | <p>capacity to determine, in a predetermined fashion or fashions, what received information should be recorded, ...</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...</p> <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>In example #5, controller, 12, is preprogrammed to process monitor information, and completing the controlled functions invoked by any given message causes controller, 12, automatically to process the information of said message as monitor information, in the fashion of controller, 39, of decoder, 203, in example #3. ...</p> <p>Automatically, control processor, 12J, transfers to buffer/comparator, 14, via matrix switch, 12 I, header information that identifies a transmission of monitor information of available programming then all of the information that is recorded at said SPAM-input-signal memory. (In each example #5 case, the information that is transferred--together with its newly added header information--continues to be called by its previously assigned name; for example, the 1st-old-radio-program-message (#5).)</p> |
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| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|                | Reference   | Language | Reference                         | Language |

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| communicating information evidencing said use of said resource or said control signal from said step of storing a record from said receiver station to said remote station. | Column 17 lines 16-17. | ... to be handled, recorded, and transmitted to a remote site <b>with all</b> other monitor information. | Page 28 lines 25-35 | [Signal processor ... 200 in Fig. 7 ... and elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring said meter records automatically to one or more remote automated billing stations that account for programming and information consumption and bill subscribers and said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage. |
|---|------------------------|--|---------------------|--|

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| 60. The method of claim 59, wherein the stored evidence information identifies or designates one or more of:<br>(1) a mass medium program; | Column 15 lines 62-63.<br><br>Column 16 lines 32-35. | [The signals for which the decoders are monitoring] may convey unique identifier codes for each program or commercial.<br><br>For example, a person might instruct video cassette recorder, <b>135</b> , automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City. | Page 49 lines 26-28.<br><br>Page 50 lines 6-7.<br><br>Page 319 lines 30-33. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>...unique identifier codes for each program unit (including commercials);....<br><br>For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City. |
| (2) a use of programming;  | Column 18 lines 30-35.                               | TV signal decoder, <b>203</b> , and radio signal decoder, <b>211</b> , also identify certain signals that monitors or processors, <b>204</b> and <b>210</b> respectively, determine to identify the programs, etc. on the channels to which TV set, <b>202</b> , and radio, <b>209</b> , are tuned, ...        | Page 408 lines 18-29  | Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains the "program unit identification code" information of said particular television program, ...   |

| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language | Reference   | Support to instant specification.<br>Language  |
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|                |  |          | <p>Page 414 lines 13-27</p> <p>Page 15 lines 16-22</p> <p>Page 411 lines 10-15</p> <p>Page 418 line 23 to page 419 line 15.</p> | <p>Said message is detected at said decoder, 203, and inputted to said controller, 39, in the above escribed fashion.</p> <p>Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains secondary "program unit identification code" information of the audio program unit of said radio transmission ...</p> <p>Said message is detected at said decoder, 210, and inputted to said controller, 44.</p> <p>The frequencies may convey television, radio, or other programming transmissions. The input transmissions may be received by means of antennas or from hard-wire connections. The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions ...</p> <p>... because the station of Fig. 7 (and Fig. 7B) is preprogrammed to collect monitor information, receiving said ... message also causes the transmission of monitor information to the onboard controller, 14A, of said signal processor, 200, in the fashion of example #3 above.</p> <p>Because the information of said ... message is transmitted periodically in said radio programming transmission, a subsequent instance of said information ... causes the SPAM decoder apparatus ... to transfer to the onboard controller, 14A, of signal processor, 200, ... a particular third transmission of monitor information containing ... "program unit identification code" information of the audio program unit of said radio transmission.</p> |

| Claim Language                 |                        | Support to parent application filed November 3, 1981.   |          | Support to instant specification.  |  |
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|                                |                        | Reference   | Language | Reference  | Language   |
| (3)<br>a transmission station; | Column 15 lines 60-62. | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission. |          | Page 49 lines 26-28.<br><br>Page 50 lines 1-4.   | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...   |
| (4)<br>a receiver station;     | Column 16 lines 56-61. | ... and, in a predetermined fashion, create a signal string<br><br>by appending digital information to the received signal which information might            |          | Page 180 lines 1-3.<br><br>Page 297 line 15.<br><br>Page 180 lines 4-15.<br><br>Page 181 lines 8-14. | Then said process-monitor-info instructions cause onboard controller, 14A, to initiate a new monitor record that reflects the new "Wall Street Week" programming.<br><br>...creating a meter record that records the decryption....<br><br>Automatically, said instructions cause onboard controller, 14A, in a predetermined fashion, to delete ... except the source mark information associated with said record; to record information of said first named instance of "program unit identification code" information (which is the "program unit identification code" of said "Wall Street Week" program to a particular "program unit identification code" location at said record location; to select particular information located at said SPAM-input-signal-@14A register memory and record information at said record location; to select particular preprogrammed record....<br><br>In a predetermined fashion, onboard controller, 14A, also records in a particular monitor record field location at said record location a particular display unit identification code that identifies monitor, 202M, as the display apparatus of said new monitor record. In a predetermined fashion, signal processor, 200, records date and time information |

| Claim Language                   | Support to parent application filed November 3, 1981. |  | Support to instant specification.                |   |
|----------------------------------|---|--|--|---|
|                                  | Reference   | Language   | Reference  | Language  |
| (5) a network;                   | Column 16 lines 32-35.<br><br>Column 16 lines 39-41.  | For example, a person might instruct video cassette recorder, 135, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.<br><br>Each discrete bit of this information could be conveyed to recorder, 135, in a signal unit or units in the programming so received and recorded. | Page 319 lines 30-33.<br><br>Page 320 lines 2-8. | received from clock, 18, in first and last particular time field...<br><br>For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.<br><br>Each discrete bit of this information could be transmitted to the subscriber station of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information. |
| (6) a broadcast station;         | Column 15 lines 60-62.                                | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.  | Page 49 lines 26-28.<br><br>Page 50 lines 1-4.   | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...  |
| (7) a channel on a cable system; | Column 16 lines 35-41.                                | Recorder, 135, might receive the programming over Manhattan Cable TV channel 4 and record the programming from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be conveyed to recorder, 135, in a signal unit or units in the programming so received and recorded.              | Page 319 line 33 to page 320 line 8.             | Recorder, 217, might receive the programming over Manhattan Cable TV channel 4 and record the programming at the time of original broadcast transmission--from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be transmitted to the subscriber station of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information.   |
| (8) a time of transmission;      | Column 15 lines 60-62.                                | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable   | Page 49 lines 26-28.                             | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information   |

| Claim Language                              |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.   |   |
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|   |                        | Reference   | Language                                     | Reference   | Language  |
|   |                        |   | systems, and possibly times of transmission. | Page 50 lines 1-4.  | include:<br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...  |
| (9) a unique identifier datum;              | Column 15 lines 62-63. | [The signals for which the decoders are monitoring] may convey unique identifier codes for each program or commercial.  |  | Page 49 lines 26-28.  | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>...unique identifier codes for each program unit (including commercials);....   |
| (10) a source or supplier of data;          | Column 15 lines 63-65. | In the case of data transmitted to the micro-computer, [the signals for which the decoders are monitoring] may be unique codes that identify the source and suppliers of the data.    |  | Page 49 lines 26-28.<br><br>Page 50 lines 19-20.                              | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include: ...<br><br>... unique codes that identify the sources and suppliers of computer data.  |
| (11) a distributor or an advertisement; and | Column 15 lines 65-68. | In the case of data received at the printer, [the signals for which the decoders are monitoring] may identify publications, articles, publishers, distributors, advertise ments, etc. |  | Page 321 lines 1-6.<br><br>Page 360 lines 31-34.<br><br>Page 496 lines 12-13. | Prerecorded, commercially distributed video and audio tapes, videodiscs, so-called "compact discs" of audio, and so-called "CD ROM" discs of data can also contain unique codes, embedded in the prerecorded programming, that identify the use and usage of said programming when said tapes or discs are played. For example, laser disc player, 232, can<br><br>For example, another of the aforementioned discounts and cents- off coupon specials is of a particular product ... that is advertised ...<br><br>At printer, 221, the printed so-called "hard copy" of said offer and coupon information emerges as: |
|   |                        |   |  | Page 496 lines 28-35.   | .....   |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|                | Reference   | Language | Reference                         | Language |

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|   |                        |  |  | . 15 cents off      15 cents off<br>. Nabisco Zweiback Teething Toast<br>.<br>.<br>.<br>.<br>.<br>.   |
| (12) an indication of a payment obligation. | column 20 lines 49-58. | ...and thence to printer, 221, for printing.<br>Other signal decoder, 227, identifies a signal in the transmission received by printer, 221, which it passes via processor, 228, and buffer/comparator, 14, of signal processor, 200, to data recorder, 16. This signal indicates that the recipe, itself, has been received.<br>Subsequently, when signal processor, 200, transfers the data in its data recorder, 16, via telephone to a remote site, that site can determine for billing purposes that the recipe was, first, ordered and, second, delivered. | Page 49 lines 26-28.<br><br>Page 50 lines 14-17. | Meter-monitor segments contain meter information and/or monitor information.<br>Examples of categories of such information include:<br><br>...unique codes for programming (other than programming identified by program unit codes) whose use obligates users to make payments (eg., royalties and residuals);.... |

|  |                        |  |  |   |
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| 61. A method of controlling a remote intermediate mass medium transmitter station to communicate mass medium program material to | Column 19 lines 60-63. | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. | Page 59 lines 29-33.<br><br>Page 25 line 34 to page 26 line 1.<br><br>Page 90 lines 4-7.<br>Applicants teach this as | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.<br><br>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.<br><br>The second message is of the information associated with the second combining synch |
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| Support to parent application filed November 3, 1981.  |                        | Support to instant specification.  |   |
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| Claim Language   | Reference              | Language   | Reference   |
|  |                        |  | the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11.   |
|  | Column 10 lines 24-28. | FIGS. 3A, 3B and 3C illustrates one instance of such use. FIGS. 3A, 3B, and 3C illustrate the use of Signal Processing Apparatus and Methods at a cable television system "head end" transmission facility that cablecasts several channels of television programming.   | Fig. 6 illustrates Signal Processing Apparatus and Methods at an intermediate transmission station that is a cable television system "head end" and that cablecasts several channels of television programming.   |
| a receiver station,  | Column 17 lines 47-53. | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit. | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.  |
|  |                        |  | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.  |
| with said remote intermediate mass medium transmitter station including a broadcast or cablecast | Column 10 lines 15-20. | The signal processing apparatus outlined in FIGS. 1, A, 2B, and 2C, and their variants as appropriate, can be used to automate the operations of an intermediate transmission point whether it be a broadcast station transmitting only a single channel of programming or a cable system cablecasting many channels.                      | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of intermediate transmission stations that receive and retransmit programming. The stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and may range in scale of operation from wireless broadcast stations that transmit a single programming transmission to cable systems that cablecast many channels |



| Claim Language   | Support to parent application filed November 3, 1981. |   | Support to instant specification.    |   |
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|  | Reference   | Language  | Reference                            | Language  |
| transmitter,   | Column 10 lines 43-47.                                | ... and/or to equipment that outputs them over various channels to the cable system's field distribution system, 93, which equipment includes here cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.   | Page 325 lines 1-4.                  | simultaneously.<br>... apparatus that outputs said transmissions over various channels to the cable system's field distribution system, 93, which apparatus includes cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.   |
| a plurality of selective transfer devices each operatively connected to said broadcast or cablecast transmitter for communicating mass medium programming, | Column 10 lines 41-43.                                | ... by means of conventional switches (here matrix switch, 75), to one or more video recorder/players, 76 and 78, ...   | Page 324 line 34-35.                 | ... a conventional matrix switch, 75, well known in the art, one or more recorder/players, 76 and 78,   |
| a mass medium programming receiver for receiving mass medium programming from at least one remote programming origination source,                          | Column 10 lines 30-39.                                | The facility receives programming from many sources. Transmissions may be received from satellites by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions can be received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions can be received by antenna, 60, and TV demodulator, 61. Other electronic programming input means, 62, can receive programming transmissions. | Page 324 lines 23-31.                | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. |
| a control signal detector, and   | Column 11 lines 3-5.                                  | Signal processor, 71, has means, described above, to identify and separate the instruction and information signals from their associated programming and ...  | Page 325 line 34 to page 326 line 7. | At signal processor system, 71, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission               |

| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.                  |  |
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|   | Reference   | Language   | Reference  | Language   |
| a computer capable of controlling   |   |  | Page 59 lines 29-33                                | station;....<br>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.   |
| one or more of said selective transfer devices, and with said remote transmitter station adapted to | Column 11 lines 15-17.<br><br>Column 11 lines 44-46.  | Cable program controller and computer, 73, is the central automatic control unit for the transmission facility.<br><br>Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video recorder/players, 76 and 78. | Page 326 lines 19-20.<br><br>Page 328 lines 14-16. | Cable program controller and computer, 73, is the central automatic control unit for the transmission station.<br><br>Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ....   |
| detect the presence of at least one control signal,   | Column 11 lines 3-5.                                  | Signal processor, 71, has means, described above, to identify and separate the instruction and information signals from their associated programming and ...   | Page 325 line 34 to page 326 line 7.               | At signal processor system, 71, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station;.... |
|   |   |  | Page 59 lines 29-33                                | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.   |
|   | Column 6 lines 48-50.                                 | This base band signal is then transmitted  | Page 34 line 35 to page                            | This base band signal is then transferred  |

| Claim Language   |                        | Support to parent application filed November 3, 1981.   |  | Support to instant specification.   |          |
|--|------------------------|---|--|---|----------|
|  |                        | Reference   | Language                               | Reference   | Language |
| to control the communication of said mass medium programming | Column 8 lines 58-59.  | through separate paths to three separate detector devices.<br><br>Control signals can be passed to the apparatus by means of the programming transmissions ...  | 35 line 1.<br><br>Page 59 lines 29-33. | through separate paths to three separate detector devices.<br><br>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.  |          |
|  | Column 11 lines 57-64. | Similarly, if controller/computer, 73, determines that incoming programming should be recorded for delayed transmission, controller/ computer, 73, selects a video recorder/player, 76 or 78, in a predetermined fashion, to record the incoming programming, instructs matrix switch, 75, to transfer the programming to the designated recorder/player, 76 or 78, ... | Page 329 line 2-20.                    | Determining that particular incoming programming is scheduled for time deferred transmission can cause computer, 73, to cause the recording of said programming. For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 67. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular preprogrammed schedule information of programming that is scheduled to be recorded upon receipt and transmitted to the field system, 93, at a later time. So determining causes computer, 73, in its preprogrammed fashion, to select a video recorder/player, 76 or 78; ... and to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 67) from television receiver, 58, to the output that leads to said selected recorder, 76 or 78. |          |
|  | Column 11 lines 38-46. | By comparing identification signals on the incoming programming with the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the   | Page 327 line 35 to page 328 line 13.  | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73,  |          |

| Claim Language   |  | Support to parent application filed November 3, 1981.   |  | Support to instant specification.                         |  |
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| to deliver from its broadcast or cablecast transmitter mass medium programming, said method comprising the steps of: |  | head end facility should transmit the programming.<br>Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video recorder/players, 76 and 78. |  |   | determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit. |
|  |  |   |  | Page 84 lines 26-28.                                      | SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....  |
|  |  |   |  | Page 28 lines 26-27.                                      | ... monitor information that identifies what programming is available, ...   |
|  |  |   |  | Page 49 lines 26-27.                                      | Meter-monitor segments contain meter information and/or monitor information.   |
|  |  |   |  | Page 328 lines 14-16.                                     | Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ...  |
|  |  |   |  | Page 326 line 35 to page 327 line 2.<br>Page 328 line 13. | ... each program unit, ... the station should transmit the unit, ...<br>... transmit the programming of each received program unit.  |
|  | Column 11 lines 30-31.<br><br>Column 10 lines 49-52. | When played on video recorder and players, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted to the field.                         |  | Page 325 lines 6-9.                                       | When played on video recorders, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted via switch 75 to field distribution system, 93.   |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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| receiving mass medium programming to be transmitted by the remote intermediate mass medium programming transmitter station and | Column 19 lines 60-62.                              | At this point, an instruction signal is generated in the television studio originating the programming ...  | Page 59 lines 29-33.   | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The Information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.  |
| delivering said mass medium programming to at least one origination transmitter,   | Column 19 lines 62-63                               | ... and [the instruction signal] is transmitted in the programming transmission.  | Page 25 lines 34-35.<br><br>Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11. | At this point, an instruction signal is generated at said program originating studio, ...<br><br>The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor segment of five fields and addresses URS microcomputers, 205.  |
| said mass medium programming having an instruct signal which is effective at said receiver station to select information from  | Column 19 lines 62-63<br><br>Column 19 lines 64-66. | ... and [the instruction signal] is transmitted in the programming transmission.<br><br>This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ... | Page 25 line 34 to page 26 line 1.<br><br>Page 25 line 34 to page 26 line 1.<br><br>Page 26 lines 1-8.   | ... an instruction signal is ... embedded in the programming transmission, and transmitted.<br><br>... an instruction signal is ... embedded in the programming transmission, and transmitted.<br><br>Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M. |

| Claim Language   |  | Support to parent application filed November 3, 1981.   |                                       | Support to instant specification.   |          |
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|  |  | Reference   | Language                              | Reference   | Language |
| processed and stored one or more data for presentation during the course of a mass medium program; | Column 18 lines 43-45.                 | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion.  | Page 419 line 34 to Page 420 line 2.  | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.   |          |
|  | Column 19 line 67 to column 20 line 1. | The viewer then sees a microcomputer generated graphic of his own stocks' performance ...   | Page 26 lines 8-11.                   | TV monitor, 202M, then displays ... the microcomputer generated graphic of the subscriber's own portfolio performance ...   |          |
|  | Column 19 lines 42-44.                 | Microcomputer, 205, is preprogramed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   | Page 21 lines 20-24.                  | Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.  |          |
|  | Column 19 lines 39-41.                 | [Microcomputer, 205,] records those prices that relate to the stocks in its stored portfolio.   | Page 449 lines 13-20.                 | Each weekday after 4:30 PM, a remote stock-price-data- transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer.  |          |
| receiving one or more control signals which  | Column 11 lines 3-14.                  | Signal processor, 71, has means, described above, to identify and separate the instruction and information signals from their associated programming and pass them, along with information identifying the channel source of each signal, externally to code reader, 72. ...<br>Code reader, 72, passes the received signals, with channel identifiers, to cable program controller and computer, 73. | Page 325 line 34 to page 326 line 11. | At signal processor system, 71, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station, automatically adds, in a predetermined fashion source mark information that identifies said associated |          |

| Claim Language   | Support to parent application filed November 3, 1981. |  | Support to instant specification.                    |   |
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|  | Reference   | Language   | Reference  | Language  |
| <p>at the remote intermediate mass medium programming transmitter station operate to control the communication of at least one of said mass medium programming and said instruct signal; and</p> | <p>Column 11 lines 38-46.</p>                         | <p>By comparing identification signals on the incoming programming with the programing schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming.<br/>Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video recorder/players, 76 and 78.</p> | <p>Page 326 lines 16-18.</p>                         | <p>distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, and transfers said selected messages, with said source mark information, to code reader, 72.</p>  |
|  |   |  | <p>Page 327 line 35 to page 328 line 13.</p>         | <p>Code reader, 72, buffers and passes the received SPAM message information, with source mark information, to cable program controller and computer, 73.</p>   |
|  |   |  |  | <p>Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br/>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.</p> |
|  |   |  | <p>Page 84 lines 26-28.</p>                          | <p>SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....<br/>... monitor information that identifies what programming is available, ...</p>   |
|  |   |  | <p>Page 28 lines 26-27.<br/>Page 49 lines 26-27.</p> | <p>Meter-monitor segments contain meter information and/or monitor information.</p>   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  |          | Support to instant specification.  |  |
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|   |                        | Reference  | Language | Reference  | Language   |
| transmitting said one or more control signals to said transmitter |                        |  |          | Page 328 lines 14-16.  | Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ...  |
|   | Column 19 lines 60-63. | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. |          | Page 59 lines 29-33.   | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.   |
|   |                        |  |          | Page 25 line 34 to page 26 line 1.   | At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.   |
|   |                        |  |          | Page 90 lines 4-7.<br>Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11. | The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ...  |
|   | Column 11 lines 38-39. | By comparing identification signals on the incoming programming ...  |          | Page 327 line 35 to page 328 line 13.  | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can |



| Claim Language   |                         | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |   |
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|  |                         | Reference   | Language  | Reference  | Language  |
| <p>62. The method of claim 61, further comprising the step of embedding</p> <p>a portion of said instruct signal and said one or more control signals in an information transmission containing said mass medium programming before transmitting said mass medium programming to said remote intermediate mass</p> | before a specific time. | Column 11 lines 28-31.                                | Such input information might also indicate <b>when</b> and on which channel or channels the head end facility should transmit each program unit to cable field distribution system, 93.   | <p>Page 84 lines 26-28.</p> <p>SPAM signals are generated at original transmission stations or intermediate transmission stations and <b>embedded in</b> television or radio or other <b>programming transmissions</b> ...</p> <p>... <b>monitor information that identifies what programming</b> is available, ...</p> <p>Meter-monitor segments contain meter information and/or monitor information.</p> <p>Such input information can indicate <b>when</b> and how the station should expect to receive each program unit, when and on which channel or channels and how the station should transmit the unit, ...</p> | determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.  |
|  |                         |   |   | Page 28 lines 26-27.   |   |
|  |                         |   |   | Page 49 lines 26-27.   |   |
|  |                         |   |   | Page 326 line 33 to page 327 line 2.   |   |
| <p>62. The method of claim 61, further comprising the step of embedding</p> <p>a portion of said instruct signal and said one or more control signals in an information transmission containing said mass medium programming before transmitting said mass medium programming to said remote intermediate mass</p> |                         | Column 19 lines 43-44.                                | ... instruction signals embedded in the "Wall Street Week" programming transmission.  | Page 21 lines 23-24.   | ... instruction signals embedded in the "Wall Street Week" programming transmission.  |
|  |                         | Column 11 lines 32-39.                                | By means of the signals, with channel indicators, received from code reader, 72, controller/computer, 73, can determine what specific programming and programming unit has been received by each receiver, 53 through 62, and is passing in line on each individual wire to matrix switch, 75.<br>By comparing identification signals on the incoming programming with the programming schedule ... | Page 327 line 35 to page 328 line 13.  | <p>Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br/>By comparing selected meter-monitor information of said message information with</p> |

| Claim Language  |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |   |
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|   |  | Reference   | Language  | Reference                          | Language  |
| medium transmitter station.   |  |   |   |                                    | information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit. |
|   |  |   |   | Page 84 lines 26-28.               | SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....   |
|   |  |   |   | Page 28 lines 26-27.               | ... monitor information that identifies what programming is available, ...  |
|   |  |   |   | Page 49 lines 26-27.               | Meter-monitor segments contain meter information and/or monitor information.  |
| 63. The method of claim 61, wherein said at least one control signal includes code or data which operates at the remote intermediate mass medium programming transmitter station to |  | Column 2 lines 63-66.                                 | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ... | Page 14 lines 27-29.               | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ...   |
|   |  | Column 3 lines 6-8.                                   | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   | Page 14 line 35 to page 15 line 2. | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   |
|   |  | Column 7 lines 36-37.                                 | Buffer/comparator, 8, organizes the data stream that it receives according to a predetermined fashion ...   | Page 30 lines 7-9.                 | Buffer/comparator, 8, receives said signals from said decoders and other signals from other inputs and organizes the received information in a predetermined fashion.   |
|   |  |   |   | Page 36 line 32 to page 37 line 3. | Each decoder is controlled by a controller, 39, 44, or 47, that has buffer, microprocessor, ROM, and RAM capacities. Said buffer capacity of controller, 39, 44, or 47, includes  |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  |                                       | Support to instant specification.  |          |
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|   |                        | Reference  | Language                              | Reference  | Language |
| identify at least one of said mass medium programming and said instruct signal, said method further comprising the step of: | Column 11 lines 38-39. | By comparing identification signals on the incoming programming with the programming schedule ...                  | Page 327 line 35 to page 328 line 13. | capacity for ... organizing, ... inputs ...<br><br>Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit. |          |
|   |                        |  | Page 84 lines 26-28.                  | SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....<br><br>... monitor information that identifies what programming is available, ...  |          |
|   |                        |  | Page 28 lines 26-27.                  | Meter-monitor segments contain meter information and/or monitor information.   |          |
|   |                        |  | Page 49 lines 26-27.                  | ... with information of the programming schedule, received earlier from input, 74, and/or network, 98, ...   |          |
|   |                        |  | Page 328 lines 9-10.                  | ... receiving input information from local input, 74, and from remote stations via telephone or other data transfer network, 98.   |          |
| transmitting a schedule which   | Column 11 lines 39-41. | ... the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, ... | Page 326 lines 28-30.                 |  |          |

| Claim Language  |                        | Support to parent application filed November 3, 1981.   | Support to instant specification.   |
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| operates at the remote intermediate mass medium programming transmitter station to                            | Column 11 lines 38-43. | By comparing identification signals on the incoming programming with the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming.  | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit. |
|   |                        |   | SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....   |
|   |                        |   | ... monitor information that identifies what programming is available, ...  |
|   |                        |   | Meter-monitor segments contain meter information and/or monitor information.  |
|   |                        |   | For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular preprogrammed schedule information of programming that is scheduled to be  |
| communicate said mass medium programming and said instruct signal to said broadcast or cablecast transmitter. |                        |   | Page 327 line 35 to page 328 line 13.   |
|   |                        |   | Page 84 lines 26-28.  |
| communicate said mass medium programming and said instruct signal to said broadcast or cablecast transmitter. |                        |   | Page 28 lines 26-27.  |
|   |                        |   | Page 49 lines 26-27.  |
|   | Column 11 lines 50-57. | ... if controller/computer, 73, determines that programming incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. | Page 328 line 22 to page 329 line 1.  |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|  |  |  |  | retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87. In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87. |
|--|--|--|--|--|

|                                      |                        |  |                       |  |
|--------------------------------------|------------------------|--|-----------------------|--|
| 64. A method of controlling at least | Column 10 lines 15-20. | The signal processing apparatus outlined in FIGS. 1, A, 2B, and 2C, and their variants as appropriate, can be used to automate the operations of an <b>intermediate</b> transmission point whether it be a broadcast station transmitting only a single channel of programming or a cable system cablecasting many channels. | Page 324 lines 8-17.  | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of <b>intermediate</b> transmission stations that receive and retransmit programming. The stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and may range in scale of operation from wireless broadcast stations that transmit a single programming transmission to cable systems that cablecast many channels simultaneously. |
| one of                               | Column 8 lines 58-59.  | Control signals can be passed to the apparatus by means of the programming transmissions ...   | Page 59 lines 29-33.  | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.   |
|                                      | Column 17 lines 47-53. | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types  | Page 390 lines 30-35. | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming  |

| Claim Language  |                        | Support to parent application filed November 3, 1981.   |   | Support to instant specification.    |   |
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|   |                        | Reference   | Language  | Reference                            | Language  |
| a plurality of receiver stations each of which includes a mass medium programming receiver, |                        |   | of co-ordinated presentations that the signal apparatus and methods described here can permit.      | Page 396 lines 8-10.                 | such as television or radio is displayed to persons.  |
|   | Column 20 lines 16-19. | Suppose a viewer watches a television program on cooking techniques that is received on TV set, 202, via <b>box</b> , 201. Julia Child's "The French Chef" is one such program. |   | Page 470 lines 1-3 and               | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.  |
|   |                        |   |   | Page 470 lines 9-12.                 | ... transmits the programming transmission of a particular conventional television program on cooking techniques that is called "Exotic Meals of India."  |
| a signal detector,  |                        |   | ... a signal is identified in the incoming programming on TV set, 202, by decoder, 203, ...         | Page 470 lines 19-21.                | At the station of Fig. 7 and 7F (which station is a subscriber station of the intermediate station of Fig. 6), in the fashions described above, apparatus is caused to receive the particular transmission of said program that is ...  |
|   | Column 20 lines 27-29. |   |   | Page 471 line 35 to page 472 line 1. | ... to display the television information of said transmission (that is, information of said audio and video) at monitor, 202M.   |
| a computer or processor, and with   |                        |   | ... which is also transferred by processor, 204, to buffer/comparator, 8, of signal processor, 200. | Page 472 lines 4-12.                 | At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ...   |
|   | Column 20 lines 29-30. |   |   | Page 37 line 26 to page 38 line 8.   | ... Automatically, the controller, 39, of decoder, 145, ... transfers said message to said controller, 20.  |
|   |                        |   |   |                                      | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |

| Support to parent application filed November 3, 1981.   |                        | Support to instant specification.  |                                       |
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| Claim Language  | Reference              | Language   | Reference                             |
| each receiver station adapted to detect the presence of a control signal and  | Column 20 lines 27-32. | Five minutes later, a signal is identified in the incoming programming on TV set, <b>202</b> , by decoder, <b>203</b> , which is also transferred by processor, <b>204</b> , to buffer/comparator, <b>8</b> , of signal processor, <b>200</b> . This signal instructs buffer/comparator, <b>8</b> , that, if <b>567</b> has been received from signal generator, <b>225</b> , ...  | Page 471 line 26 to page 472 line 17. |
| to input a subscriber response to an offer communicated in a mass medium programming presentation, said method comprising the steps of: | Column 20 lines 19-26. | Halfway through the program, the host says, "If you are interested in cooking what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press <b>567</b> on your Widget Signal Generator and Local Input." The viewer then presses buttons <b>567</b> on local input, <b>225</b> , which signal is conveyed to the buffer/comparator, <b>8</b> (referring to Fig. 1), of signal processor, <b>200</b> , to hold and process further ...  | Page 471 lines 6-25.                  |
|   |                        | Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for-entered-information-and-process instructions, ...<br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, <b>145</b> , and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, <b>20</b> , of signal processor, <b>200</b> . ...<br>Receiving said message causes controller, <b>20</b> , to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, <b>20</b> , to determine that TV <b>567</b> # information exists at said last-local-input-# memory ...<br>Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV <b>567</b> #". Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ... --enters TV <b>567</b> #, in a fashion well known in the art, at the keyboard of the specific local input, <b>225</b> , of his own station which causes said input, <b>225</b> , to transmit a particular preprogrammed process-local-input instruction and said TV <b>567</b> # information to the controller, <b>20</b> , of the signal processor, <b>200</b> , of said station.<br>Receiving said instruction and information causes the controller, <b>20</b> , at each station where |                                       |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.                 |  |
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|   | Reference   | Language  | Reference   | Language   |
|   |   |   |   | TV567# is entered, in a predetermined fashion, to retain said TV567# information at particular last-local-input-# memory.  |
| receiving a first code or first data at a transmitter station,  | Column 4 lines 5-6.<br><br>Column 10 lines 61-63.     | These techniques employ signals embedded in programs.<br><br>Incoming programing transmissions are received at the relevant receiver points, antennas, 50, 57, and 60, and other means, 62. | Page 13 lines 25-26.<br><br>Page 324 lines 23-31. | The present invention employs signals embedded in programming.<br><br>The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62.  |
| said first code or data designating at least one of said subscriber response and a product or service offered by said mass medium programming presentation; | Column 20 lines 37-39.                                | The signal transmission from processor, 204, also passes a signal word to signal processor, 200, ...  | Page 477 lines 8-23.                              | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating<br><br>By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control</b> .") |
|   | Column 2 lines 63-66.                                 | (The term "signal unit" hereinafter means   | Page 14 lines 27-29.                              | (The term "signal unit" hereinafter means <b>one</b>   |



| Claim Language | Support to parent application filed November 3, 1981.<br>Reference | Language   | Reference                                   | Support to instant specification.<br>Language   |
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|                | Column 7 lines 37-39.  | <p><b>one complete signal instruction or information message unit.</b> Examples of signal units are a unique code identifying a programming unit, or a ...</p> <p>... that enables buffer/comparator, 8, among other things, to assemble signal units from signal words.</p> | <p>Page 37 lines 22 to page 38 line 10.</p> | <p><b>complete signal instruction or information message unit.</b> Examples of signal units are a unique code identifying a programming unit, or a ...</p> <p>Controller, 39, 44, or 47, is preprogrammed to receive units of signal information, to assemble said units into signal words that subscriber station apparatus can receive and process, and to transfer said words to said apparatus. In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to discard received duplicate, incomplete, or irrelevant information; to correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; to modify selectively particular corrected and converted information in a predetermined fashion or fashions; to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. Said controller, 39, 44, or 47, has one or more output ports for communicating signal information to said apparatus.</p> <p>Fig. 3A shows one such preferred controller, 39.</p> <p>Buffer, 39C, and processor, 39D, are the second buffer and processor and perform</p> |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|                | Reference   | Language | Reference                         | Language |

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|   |   |  |   | protocol conversion functions.<br><br>In all cases, signals may convey information in discrete words, transmitted at separate times or in separate locations, that receiver apparatus must assemble in order to receive one complete instruction.  |
| receiving at said transmitter station a first instruct signal | Column 10 lines 61-64.                            | Incoming programing transmissions are received at the relevant receiver points, antennas, 50, 57, and 60, and other means, 62. They are fed along the conventional paths described above.  | Page 14 lines 22-25.<br><br>Page 324 lines 23-33.                 | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire...<br><br>The present invention employs signals embedded in programming.<br><br>Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for- entered-information-and-process instructions, ...<br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 20, of signal processor, 200. ...<br>Receiving said message causes controller, |
|   | Column 4 lines 5-6.<br><br>Column 20 lines 27-33. | These techniques employ signals embedded in programs.<br><br>Five minutes later, a signal is identified in the incoming programming on TV set, 202, by decoder, 203, which is also transferred by processor, 204, to buffer/comparator, 8, of signal processor, 200. This signal instructs buffer/comparator, 8, that, if 567 has been received from signal generator, 225, signal processor, 200, should, ... | Page 13 lines 25-26.<br><br>Page 471 line 26 to page 472 line 17. |  |

| Support to parent application filed November 3, 1981.                            |                        | Support to instant specification.  |   |
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| Claim Language   | Reference              | Reference  | Language  |
| which is effective at said at least one receiver station to                      | Column 11 lines 50-57. | ... if controller/computer, 73, determines that programming incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87.<br>controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. | 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory and to cause ...<br><br>For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular preprogrammed schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87. In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87. |
| select and store one or more second data received in an information transmission | Column 20 lines 37-42. | The signal transmission from processor, 204, also passes a signal word to signal processor, 200,   | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular covert control information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...<br><br>By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only   |
|  |                        | Page 328 line 22 to page 329 line 1.   |   |
|  |                        | Page 477 lines 8-23.   |   |
|  |                        | Page 281 lines 1-6.  |   |

| Support to parent application filed November 3, 1981.   |  | Support to instant specification.   |   |
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| Claim Language  | Reference  | Language  | Reference   |
|   |  | selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called "covert control.")  |   |
|   | which, in a predetermined fashion, signal processor, 200, decrypts and transfers                               | ... the information of said segments is encrypted prior to transmission ...<br>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ...<br>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111". | Page 282 line 2 to page 283 line 33.              |
|   | to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe. | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)  | Page 478 lines 1-5.                               |
| for subsequent processing or presentation during the course of said mass medium programming presentation; | Column 20 lines 46-49.   | One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b> ... instructions ...<br>... selected converter box, 222, to tune said box, 222, to receive said second transmission;  | Page 473 lines 3-13.<br><br>Page 477 lines 12-17. |

| Claim Language  |  | Support to parent application filed November 3, 1981. |   | Support to instant specification.   |   |
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|   |  | Reference   | Language  | Reference   | Language  |
|   |  |   |   |   | to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....<br><br>... causes ... said decoder, 290, to detect and process properly the information of said second message.<br><br>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)<br><br>Receiving said output information causes printer, 221, to print the information of said specific recipe and list.  |
|   |  |   |   | Page 477 lines 23-29.<br><br>Page 478 lines 1-5.<br><br>Page 475 lines 1-2. |   |
| transferring said first code or first data or said first instruct signal to a transmitter at said transmitter station |  | Column 11 lines 50-57.                                | ... if controller/computer, 73, determines that programming incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. | Page 328 line 22 to page 329 line 1.  | For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information and the added source mark information of said message identifies distribution amplifier, 63. Receiving said message causes computer, 73, to determine, in a predetermined fashion, that said "code" information matches particular preprogrammed schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87. In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87. |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.  |  |
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|   | Reference   | Language  | Reference                          | Language   |
| at a specific time; and   | Column 4 lines 5-6.                                   | These techniques employ signals embedded in programs.   | Page 13 lines 25-26.               | The present invention employs signals embedded in programming.   |
|   | Column 2 lines 63-66.                                 | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ... | Page 14 lines 27-29.               | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ...  |
|   | Column 3 lines 6-8.                                   | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   | Page 14 line 35 to page 15 line 2. | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.  |
|   | Column 20 line 27.                                    | Five minutes later, ...   | Page 471 lines 26-28.              | Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message ...  |
| transmitting said first code or first data or said first instruct signal from said transmitter station. | Column 12 lines 45-47.                                | Beyond channel combining system and multiplexer, <b>92</b> , amplifier, <b>94</b> , transmits programming to signal processor, <b>71</b> , and signal processor, <b>96</b> , ...                          | Page 337 lines 1-8.                | Fig. 6 shows particular signal processor system monitoring apparatus associated with the intermediate station of Fig. 6. In field distribution system, <b>93</b> , amplifier, <b>94</b> , inputs programming transmissions to signal processor system, <b>71</b> , (where said transmissions are inputted to one alternate contact of the switch, <b>1</b> , of the signal processor of said system, <b>71</b> ), and amplifier, <b>95</b> , inputs programming transmissions to signal processor, <b>96</b> , ... |
|   | Column 4 lines 5-6.                                   | These techniques employ signals embedded in programs.   | Page 13 lines 25-26.               | The present invention employs signals embedded in programming.   |
|   | Column 2 lines 63-66.                                 | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ... | Page 14 lines 27-29.               | (The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ...  |
|   | Column 3 lines 6-8.                                   | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   | Page 14 line 35 to page 15 line 2. | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.  |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|  | Column 20 lines 27-33. | <p>together on a single line of video or sequentially in audio.</p> <p>Five minutes later, a signal is identified in the incoming programming on TV set, <b>202</b>, by decoder, <b>203</b>, which is also transferred by processor, <b>204</b>, to buffer/comparator, <b>8</b>, of signal processor, <b>200</b>. This signal instructs buffer/comparator, <b>8</b>, that, if <b>567</b> has been received from signal generator, <b>225</b>, signal processor, <b>200</b>, should, ...</p> | <p>Page 471 line 26 to page 472 line 17.</p> | <p>single line of video or sequentially in audio.</p> <p>Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for- entered-information-and-process instructions, ...</p> <p>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, <b>145</b>, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, <b>20</b>, of signal processor, <b>200</b>. ...</p> <p>Receiving said message causes controller, <b>20</b>, to load and execute said check-for- entered-information-and-process instructions, and executing said instructions causes controller, <b>20</b>, to determine that TV <b>567#</b> information exists at said last-local-input-# memory and to cause ...</p> |
|--|------------------------|---|--|---|

|   |                        |   |   |  |
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| 65. The method of claim 64, wherein said instruct signal or said code or said first data is embedded in a television signal or in a signal containing a television program. | Column 19 lines 60-63. | <p>At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission.</p> | <p>Page 59 lines 29-33.</p> <p>Page 25 line 34 to page 26 line 1.</p> <p>Page 90 lines 4-7.<br/>Applicants teach this as the composition of the</p> | <p>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.</p> <p>At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.</p> <p>The second message is of the information associated with the second combining synch command. Said second command has a "00"</p> |
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| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|  |  |  | instruction signal of page 25 line 34. See page 26 lines 1-4 and 20-28, page 89 lines 3-6, and page 90 lines 4-11. | header, an execution segment, and a meter-monitor ... |
|--|--|--|--|---|

|   |                        |   |                                       |   |
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| 66. The method of claim 64, wherein said instruct signal incorporates some downloadable code. | Column 11 lines 3-14.  | Signal processor, 71, has means, described above, to identify and separate the instruction and information signals from their associated programming and pass them, along with information identifying the channel source of each signal, externally to code reader, 72. ...<br>Code reader, 72, passes the received signals, with channel identifiers, to cable program controller and computer, 73. | Page 325 line 34 to page 326 line 11. | At signal processor system, 71, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station, automatically adds, in a predetermined fashion source mark information that identifies said associated distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; and transfers said selected messages, with said source mark information, to code reader, 72. |
|   |                        |   | Page 326 lines 16-18.                 | Code reader, 72, buffers and passes the received SPAM message information, with source mark information, to cable program controller and computer, 73.  |
|   | Column 20 lines 27-37. | Five minutes later,   | Page 471 line 26 to page 472 line 17. | Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for- entered-information-and-process instructions, ...<br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information   |



| Claim Language |  | Support to parent application filed November 3, 1981.  |  | Support to instant specification.   |  |
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| Reference      |  | Language   |  | Reference   |  |
|                |  | processor, <b>204</b> , to buffer/comparator, <b>8</b> , of signal processor, <b>200</b> .<br><br>This signal instructs buffer/comparator, <b>8</b> , that, if <b>567</b> has been received from signal generator, <b>225</b> , signal processor, <b>200</b> , should, in a predetermined fashion, |  | invokes particular controlled function instructions that cause said message to be transferred to the controller, <b>20</b> , of signal processor, <b>200</b> .<br>Receiving said message causes controller, <b>20</b> , to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, <b>20</b> , to determine that TV <b>567</b> # information exists at said last-local-input-# memory and to cause an instance of ...<br><br>(An alternate method for inputting said second message to the microcomputers, <b>205</b> , at stations where TV <b>567</b> # is entered at a local input, <b>225</b> , is to embed said message in a particular second transmission that is different from the transmission of said "Exotic Meals of India" programming and to cause a selected All signal decoder, <b>290</b> , at each one of said stations to receive said second transmission, thereby causing said decoder, <b>290</b> , to detect and transfer the information of said second message to the microcomputer, <b>205</b> , of said station.<br><br>In this alternate method, ... said first SPAM message causes controller, <b>20</b> , of signal processor, <b>200</b> , of each one of said stations to cause the tuner, <b>223</b> , of a selected converter box, <b>222</b> , to tune said box, <b>222</b> , to receive said second transmission; to cause the matrix switch, <b>258</b> , to establish a programming communication link between said selected converter box, <b>222</b> , and said decoder, <b>290</b> ; to cause the appropriate receiver apparatus of said decoder, <b>290</b> , to receive said transmission ...<br><br>... instructions causes microcomputer, <b>205</b> , to generate information of the specific fish curry recipe and fish curry shopping list of the |  |
|                |  | instruct tuner, <b>223</b> , to tune cable converter box, <b>222</b> , to the appropriate channel to receive the recipe in encoded digital form  |  | Page 476 line 34 to<br>Page 477 line 8.   |  |
|                |  | and instruct control means, <b>226</b> , to activate printer, <b>221</b> .   |  | Page 477 lines 8-17.  |  |
|                |  |  |  | Page 474 lines 3-7.   |  |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|                | Reference   | Language | Reference                         | Language |

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|  |  |  | family of the subscriber of the station of Figs. 7 and 7F; to cause said recipe and shopping list to be printed at printer, 221 ... |
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| 67. The method of claim 64, wherein said first code or first data causes said at least one receiver station to compare information contained in said first code or said first data to said subscriber response, said method further comprising the step of | Column 20 lines 31-36. | This signal instructs buffer/comparator, 8, that, if 567 has been received from signal generator, 225, signal processor, 200, should, in a predetermined fashion, instruct tuner, 223, to tune cable converter box, 222, to the appropriate channel to receive the recipe in encoded digital form ... | <p>Page 471 line 26 to page 472 line 17.</p> <p>Page 476 line 34 to page 477 line 8.</p> <p>Page 477 lines 8-17.</p> | <p>Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that consists of ... check-for-entered-information-and-process instructions, ...</p> <p>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 20, of signal processor, 200. ...</p> <p>Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory ...</p> <p>(An alternate method for inputting said second message to the microcomputers, 205, at stations where TV567# is entered at a local input, 225, is to embed said message in a particular second transmission that is different from the transmission of said "Exotic Meals of India" programming and to cause a selected All signal decoder, 290, at each one of said stations to receive said second transmission, thereby causing said decoder, 290, to detect and transfer the information of said second message to the microcomputer, 205, of said station.</p> <p>In this alternate method, ... said first SPAM</p> |
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| Support to parent application filed November 3, 1981.   |  | Support to instant specification.  |  |
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| Claim Language  | Reference  | Language   | Reference  |
| transmitting said second data.  | Column 20 lines 27-29.<br><br>Column 10 lines 49-52. | ... a signal is identified in the incoming programming on TV set, 202, by decoder, 203, ...<br><br>When played on video recorder and players, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted to the field. | message causes controller, 20, of signal processor, 200, of each one of said stations to cause the tuner, 223, of a selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to establish a programming communication link between said selected converter box, 222, and said decoder, 290; to cause the appropriate receiver apparatus of said decoder, 290, to receive said transmission ...<br><br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ...<br><br>When played on video recorders, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted via switch 75 to field distribution system, 93. |
| 68. The method of claim 64, wherein said product or service includes at least one of text, hardcopy, video and audio. | Column 20 lines 46-49.                               | When the transmission of the recipe is received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing.   | One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b> ... instructions ...<br><br>... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....<br><br>... causes ... said decoder, 290, to detect and process properly the information of said second message.   |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|  |  |  | Page 478 lines 1-5. | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.) |
|  |  |  | Page 475 lines 1-2. | Receiving said output information causes printer, 221, to print the information of said specific recipe and list.  |

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| 69. A method of controlling at least one of a plurality of receiver stations | Column 18 lines 43-45. | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion. | Page 419 line 34 to Page 420 line 2. | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.  |
|  | Column 17 lines 47-49. | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site.                   | Page 390 lines 30-35.                | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.       |
| each of which includes a broadcast or cablecast signal receiver,             | Column 19 lines 23-25. | ... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X ...  | Page 437 lines 1-6.                  | Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, 20.<br>Receiving said please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ... |
|  |                        |  | Page 439 lines 9-15.                 | ... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;  |

| Claim Language  | Support to parent application filed November 3, 1981. |  | Support to instant specification.  |   |
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|   |   |  | Page 295 lines 6-8.                | ...   |
|   |   |  | Page 439 lines 9-15.               | Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its...<br>...to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;<br>...  |
| a processor,  | Column 19 lines 42-43.                                | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to ...  | Page 450 lines 31-32.              | ... caused his microcomputer, 205, to be preprogrammed as described above; ...  |
|   |   |  | Page 21 lines 20-23.               | Microcomputer, 205, is preprogrammed to ... respond ... to ...  |
| a signal detector, said signal detector adapted to detect signals within a broadcast or cablecast transmission,                                       | Column 19 lines 63-64.                                | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.  | Page 26 lines 1-2.                 | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...   |
|   |   |  | Page 37 line 26 to page 38 line 8. | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
| and said processor programmed to respond to detected signals communicated from said detector, and said method of controlling comprising the steps of: | Column 19 lines 42-44.                                | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission. | Page 21 lines 20-24.               | Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.  |
| receiving at a broadcast or cablecast   | Column 4 lines 5-6.                                   | These techniques employ signals embedded in programs.  | Page 13 lines 25-26.               | The present invention employs signals embedded in programming.  |

| Claim Language  | Support to parent application filed November 3, 1981. |   | Support to instant specification.                |  |
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|   | Reference   | Language  | Reference  | Language   |
| transmitter station   | Column 10 lines 61-63.                                | Incoming programing transmissions are received at the relevant receiver points, antennas, <b>50</b> , <b>57</b> , and <b>60</b> , and other means, <b>62</b> .  | Page 324 lines 23-31.                            | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, <b>50</b> , low noise amplifiers, <b>51</b> and <b>52</b> , and TV receivers, <b>53</b> , <b>54</b> , <b>55</b> , and <b>56</b> . Microwave transmissions are received by microwave antenna, <b>57</b> , and television video and audio receivers, <b>58</b> and <b>59</b> . Conventional TV broadcast transmissions are received by antenna, <b>60</b> , and TV demodulator, <b>61</b> . Other electronic programming transmissions are received by other programming input means, <b>62</b> .  |
| a first instruct signal which is effective at said at least one of a plurality of receiver stations | Column 18 lines 52-55.                                | The news services preceed each news transmission with a unique signal that uniquely identifies the company or companies to which the news item refers and/or the industries.  | Page 420 line 32 to page 421 line 17.            | Each remote station transmits each particular news item within the particular format of a Transmit-News-Item SPAM message, and receiving any given message in a Transmit-News-Item SPAM message ...<br>In due course, said remote news-service-A station transmits a particular AT&T news item in a particular Transmit-AT&T-News-Item message that is in said Transmit- News-Item SPAM message format and that consists of ... the "program unit identification code" information of said AT&T news item and subject matter information of said binary information of "T", appropriate padding bits, an information segment that contains said <b>AT&amp;T news item</b> , and an end of file signal. |
| to select and store one or more data  | Column 18 lines 62-67.                                | In a predetermined fashion, either microcomputer, <b>205</b> , or signal processor, <b>200</b> , instructs tuner, <b>223</b> , to set cable converter box, <b>222</b> , to the proper channel, and microcomputer, <b>200</b> , may record the information in memory or transfer it to printer, <b>221</b> , for printing. | Page 423 lines 11-13.<br><br>Page 424 lines 2-9. | Receiving said message causes said controller, <b>20</b> , to cause a selected cable converter box, <b>222</b> , to receive the transmission identified by said channel mark; ....<br><br>Then receiving a particular to-223 instruction from said control processor, <b>20A</b> , causes controller, <b>20</b> , to transmits particular instructions, via said control information transmission link, to said tuner, <b>223</b> , thereby causing said tuner, <b>223</b> , to tune its associated  |

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| Claim Language   |  | Support to parent application filed November 3, 1981.   | Support to instant specification.  |   |
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| <p>transferring said first instruct signal to a transmitter;</p> <p>receiving one or more first control signals at said transmitter station,</p> <p>said control signals addressing said first</p> |  | ... transmit these overlays to TV set, 202,...  | the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.  | Page 26 lines 4-8.  |
|  | Column 11 lines 54-57.   | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.   | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.   | Page 328 line 31 to page 329 line 1.  |
|  | Column 4 lines 5-6.<br><br>Column 2 lines 63-66.<br><br>Column 10 lines 61-63. | These techniques employ signals embedded in programs.<br><br>(The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ...<br><br>Incoming programming transmissions are received at the relevant receiver points, antennas, 50, 57, and 60, and other means, 62. | The present invention employs signals embedded in programming.<br><br>(The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> . Examples of signal units are a unique code identifying a programming unit, or a ...<br><br>The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. | Page 13 lines 25-26.<br><br>Page 14 lines 27-29.<br><br>Page 324 lines 23-31. |
|  | Column 7 lines 54-58.  | If a signal or signals are to be passed externally, processor unit, 12, identifies, in  | If a signal or signals are to be transferred externally, in a predetermined fashion  | Page 31 lines 14-18.  |



| Claim Language  |   | Support to parent application filed November 3, 1981   |                                       | Support to instant specification.   |  |
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| instruct signal to said processor at said at least one of a plurality of receiver stations; and | Column 18 lines 58-62.                      | a pre-determined fashion, the external equipment to which the signal or signals are addressed and passes them to appropriate jack ports for external transmission.<br><br>Signal processor, <b>200</b> , scans sequentially all channels. When it identifies a signal of interest, it relays that information and the channel identifier, in this illustration, to microcomputer, <b>205</b> . | Page 422 line 23 to page 423 line 10. | controller, 12, identifies the external apparatus to which the signal or signals are addressed and transfers them to the appropriate port or ports for external transmission.<br><br>At the station of Fig. 7 and 7C, signal processor, 200, scans sequentially all channels at its switch, 1, mixer, 3, and decoder, 30, in the fashion of example #5.<br>In due course, one instance of said Select-AT&T-News-Item message is detected at said decoder, 30, and inputted to the controller, 39, of said decoder, 30.<br>Receiving said Select-AT&T-News-Item message causes said controller, 39, to transmit said message to the controller, 20, of said signal processor, 200. ... Determining a match causes said controller, 39, to transmit said message, with channel mark information that identifies the particular channel in which said message was embedded, to said controller, 20, via control information transmission means and to continue functioning in the fashion of example #5.<br><br>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.) |  |
|   | transferring said one or more first control | Column 11 lines 54-57.   | Page 328 line 31 to page 329 line 1.  | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch,   |  |

| Claim Language  |  | Support to parent application filed November 3, 1981.  |  | Support to instant specification.  |  |
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| signals to said transmitter,  |  |  | transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. |  | 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87. |
| said transmitter station broadcasting or cablecasting said first instruct signal and said one or more first control signals to said plurality of receiver stations.                       | Column 10 lines 40-47.   | All of these received transmissions feed into the facility by hard-wire and connect, by means of conventional switches (here matrix switch, 75), to one or more video recorder/players, 76 and 78, and/or to equipment that outputs them over various channels to the cable system's field distribution system, 93, which equipment includes here cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92. | Page 324 line 31 to page 325 line 4.   | Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire, a conventional matrix switch, 75, well known in the art, one or more recorder/players, 76 and 78, apparatus that outputs said transmissions over various channels to the cable system's field distribution system, 93, which apparatus includes cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.         |  |
| 70. The method of claim 69, wherein at least one of said first instruct signal and said one or more first control signals are embedded in the non-visible portion of a television signal. | Column 20 lines 27-29.<br><br>Column 4 lines 5-6.<br><br>Column 4 lines 18-22. | ... a signal is identified in the incoming programming on TV set, 202, by decoder, 203, ...<br><br>These techniques employ signals embedded in programs.<br><br>In television they may appear on one line in the video portion of the transmission, or on a portion of one line, or on more than one line, and will probably lie outside the range of the television picture displayed on a normally tuned television set.                     | Page 471 line 35 to page 472 line 1.<br><br>Page 13 lines 25-26.<br><br>Page 14 lines 6-11.                  | At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ....<br><br>The present invention employs signals embedded in programming.<br><br>In television they may appear on one line in the video portion of the transmission such as line 20 of the vertical interval, or on a portion of one line, or on more than one line, and they will probably lie outside the range of the television picture displayed on a normally tuned television set. |  |
| 71. The method of   | Column 10 lines 15-20.   | The signal processing apparatus outlined in  | Page 324 lines 8-17.   | The signal processing apparatus outlined in  | I2CM 150, Appendix A, Page 300   |

| Support to parent application filed November 3, 1981.  |                        | Support to instant specification.  |   |
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| Claim Language   | Reference              | Language   | Reference   |
| claim 69, wherein said one or more control signals identifies two of said plurality of receiver stations |                        | FIGS. 1, A, 2B, and 2C, and their variants as appropriate, can be used to automate the operations of an <b>intermediate</b> transmission point whether it be a broadcast station transmitting only a single channel of programming or a cable system cablecasting many channels. | FIGS. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of <b>intermediate</b> transmission stations that receive and retransmit programming. The stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and may range in scale of operation from wireless broadcast stations that transmit a single programming transmission to cable systems that cablecast many channels simultaneously.  |
| asynchronously and   | Column 12 lines 45-47. | Beyond channel combining system and multiplexer, <b>92</b> , amplifier, <b>94</b> , transmits programming to signal processor, <b>71</b> , and signal processor, <b>96</b> , ...   | Fig. 6 shows particular signal processor system monitoring apparatus associated with the intermediate station of Fig. 6. In field distribution system, <b>93</b> , amplifier, <b>94</b> , inputs programming transmissions to signal processor system, <b>71</b> , (where said transmissions are inputted to one alternate contact of the switch, <b>1</b> , of the signal processor of said system, <b>71</b> ), and amplifier, <b>95</b> , inputs programming transmissions to signal processor, <b>96</b> , ...  |
| each of said two receiver stations receive and   | Column 11 lines 3-5.   | Signal processor, <b>71</b> , has means, described above, to identify and separate the instruction and information signals from their associated programming and ...   | At signal processor system, <b>71</b> , which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, <b>63</b> , <b>64</b> , <b>65</b> , <b>66</b> , <b>67</b> , <b>68</b> , <b>69</b> , or <b>70</b> , is inputted into a dedicated decoder (such as decoders, <b>27</b> , <b>28</b> , and <b>29</b> in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, <b>63</b> , <b>64</b> , <b>65</b> , <b>66</b> , <b>67</b> , <b>68</b> , <b>69</b> , or <b>70</b> ; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station;.... |
|  |                        |  | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed   |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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| respond to said instruct signal asynchronously. | Column 12 lines 45-47. | Beyond channel combining system and multiplexer, <b>92</b> , amplifier, <b>94</b> , transmits programming to signal processor, <b>71</b> , and signal processor, <b>96</b> , ...   | Page 337 lines 1-8.  | apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.<br><br>Fig. 6 shows particular signal processor system monitoring apparatus associated with the intermediate station of Fig. 6. In field distribution system, <b>93</b> , amplifier, <b>94</b> , inputs programming transmissions to signal processor system, <b>71</b> , (where said transmissions are inputted to one alternate contact of the switch, <b>1</b> , of the signal processor of said system, <b>71</b> ), and amplifier, <b>95</b> , inputs programming transmissions to signal processor, <b>96</b> , ... |
|   | Column 7 lines 50-54.  | Processor or monitor, <b>12</b> , analyzes, in a pre-determined fashion, the signal words and units that it receives and determines whether they are to be passed to external equipment or to buffer/comparator, <b>14</b> , for further processing or both. | Page 31 lines 10-14. | Controller, <b>12</b> , receives the signals inputted from buffer/comparator, <b>8</b> , and decryptor, <b>10</b> ; analyzes said signals in a predetermined fashion; and determines whether they are to be transferred to external equipment or to buffer/comparator, <b>14</b> , or both.  |
|   | Column 7 lines 59-60.  | If [a signal or signals] are to be processed further, processor or monitor, <b>12</b> , passes them to buffer/comparator, <b>14</b> .  | Page 31 lines 18-22. | If [a signal or signals] contain meter and/or monitor information and are to be processed further, controller, <b>12</b> , selects, assembles, and transfers the appropriate information to buffer/comparator, <b>14</b> .   |

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| 72. The method of claim 69, wherein a switch communicates signals selectively between a transmitter station receiver and one of a memory or recorder and said transmitter, said method further comprising one | Column 10 lines 40-45. | All of these received transmissions feed into the facility by hard-wire and connect, by means of conventional switches (here matrix switch, <b>75</b> ), to one or more video recorder/players, <b>76</b> and <b>78</b> , and/or to equipment that outputs them over various channels to the cable system's field distribution system, <b>93</b> , ... | Page 324 line 31-to page 325 line 2. | Each receiver/modulator/input apparatus, <b>53</b> through <b>62</b> , transfers its received transmissions into the station by hard-wire a conventional matrix switch, <b>75</b> , well known in the art, one or more recorder/players, <b>76</b> and <b>78</b> , apparatus that outputs said transmissions over various channels to the cable system's field distribution system, <b>93</b> , ... |
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| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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| from the group consisting of:  |                        |  |                                       |  |
| detecting a second control signal which is effective at the transmitter station to cause communication;  | Column 11 lines 18-21. | The controller/computer, 73, has means for receiving input information from local input, 74, and from remote sources via telephone or other data transfer network, 98.   | Page 326 lines 27-30.                 | Computer, 73, has means for receiving input information from local input, 74, and from remote stations via telephone or other data transfer network, 98.   |
| determining a specific signal source from which to communicate at least one of said first instruct signal and said first control signal to said transmitter; | Column 11 lines 54-57. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.  | Page 328 line 31 to page 329 line 1.  | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.   |
| controlling said switch to communicate at least one of said first instruct signal and said first control signals to said transmitter in response             | Column 11 lines 54-57. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.  | Page 328 line 31 to page 329 line 1.  | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.   |
|  | Column 4 lines 5-13.   | These techniques employ signals embedded in programs. The advantage of such embedded signals, as compared to header and trailer signals, is that they cannot become separated inadvertently from the programming and, thereby, inhibit automatic processing, that they can convey signals to equipment that must switch manners or modes of operation during transmissions of individual units of programming, and that they can be monitored. | Page 13 lines 25-32.                  | The present invention employs signals embedded in programming. Embedded signals provide several advantages. They cannot become separated inadvertently from the programming and, thereby, inhibit automatic processing. They occur at precise times in programming and can synchronize the operation of receiver station apparatus to the timing of programming transmissions. They can be conveniently monitored. |
| to a second control signal which is  | Column 11 lines 38-43. | By comparing identification signals on the incoming programming with the programming   | Page 327 line 35 to page 328 line 13. | Computer, 73, monitors incoming programming by means of the aforementioned   |

| Claim Language  |                        | Support to parent application filed November 3, 1981.   |   | Support to instant specification.                |  |
|---|------------------------|---|---|--|--|
|   |                        | Reference   | Language  | Reference  | Language   |
| effective at the transmitter station to instruct communication;   |                        |   | schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming. |  | dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit. |
|   |                        |   |   | Page 84 lines 26-28.                             | SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....<br><br>... monitor information that identifies what programming is available, ...  |
|   |                        |   |   |  | Meter-monitor segments contain meter information and/or monitor information.   |
|   |                        |   |   | Page 28 lines 26-27.<br><br>Page 49 lines 26-27. |  |
| controlling said switch to communicate at least one of said first instruct signal and said first control signals from a selected signal source; and | Column 11 lines 54-57. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87. | Page 328 line 31 to page 329 line 1.  |  | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.  |
|   | Column 4 lines 5-13.   | These techniques employ signals embedded in programs. The advantage of such embedded signals, as compared to  | Page 13 lines 25-32.  |  | The present invention employs signals embedded in programming. Embedded signals provide several advantages. They   |

| Claim Language |  | Support to parent application filed November 3, 1981 |          | Support to instant specification. |          |
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|                |  | Reference  | Language | Reference                         | Language |

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|  |                        |   | header and trailer signals, is that they cannot become separated inadvertently from the programming and, thereby, inhibit automatic processing, , that they can convey signals to equipment that must switch manners or modes of operation during transmissions of individual units of programming, and that they can be monitored. |                       | cannot become separated inadvertently from the programming and, thereby, inhibit automatic processing. They occur at precise times in programming and can synchronize the operation of receiver station apparatus to the timing of programming transmissions. They can be conveniently monitored.               |
| controlling said switch to communicate to said memory or recorder at least one of said instruct signal and said first control signals. | Column 11 lines 61-64. | ... in a predetermined fashion, to record the incoming programming, instructs matrix switch, 75, to transfer the programming to the designated recorder/player, 76 or 78, ... |   | Page 329 lines 13-20. | ... in its preprogrammed fashion, ... to ... record programming; and to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 67) from television receiver, 58, to the output that leads to said selected recorder, 76 or 78. |

|   |   |   |  |  |
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| 73. The method of claim 69, wherein a controller controls a switch to communicate to said transmitter a selected signal, further comprising one from the group consisting of: | Column 11 lines 54-57.<br><br>Column 2 lines 63-64. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.<br><br>(The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> .) | Page 328 line 31 to page 329 line 1.<br><br>Page 14 lines 26-27. | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.<br><br>(The term "signal unit" hereinafter means <b>one complete signal instruction</b> or <b>information message unit</b> .) |
| detecting a second control signal which is effective at the transmitter station to cause transmission;  | Column 11 lines 18-21.                              | The controller/computer, 73, has means for receiving input information from local input, 74, and from remote sources via telephone or other data transfer network, 98.  | Page 326 lines 27-30.  | Computer, 73, has means for receiving input information from local input, 74, and from remote stations via telephone or other data transfer network, 98.   |
| inputting to said controller a second control signal which is   | Column 11 lines 18-21.                              | The controller/computer, 73, has means for receiving input information from local input, 74, and from remote sources via  | Page 326 lines 27-30.  | Computer, 73, has means for receiving input information from local input, 74, and from remote stations via telephone or other data   |

| Claim Language   |                        | Support to parent application filed November 3, 1981   |   | Support to instant specification.  |                       |
|--|------------------------|--|---|--|-----------------------|
|  |                        | Reference  | Language                                      | Reference  | Language              |
| effective to control said switch;  |                        |  | telephone or other data transfer network, 98. |  | transfer network, 98. |
| controlling said switch to communicate at least one of said instruct signal and said first control signals according to a transmission schedule; | Column 11 lines 38-43. | By comparing identification signals on the incoming programming with the programming schedule received earlier from local input, 74, and/or from a remote site via network, 98, controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming. | Page 327 line 35 to page 328 line 13.         | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit.<br><br>SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....<br><br>... monitor information that identifies what programming is available, ...<br><br>Meter-monitor segments contain meter information and/or monitor information. |                       |
| controlling said switch to communicate from a specific one of a plurality of signal sources; and   | Column 11 lines 54-57. | ... controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.  | Page 328 line 31 to page 329 line 1.          | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator,   |                       |



| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|                | Reference   | Language | Reference                         | Language |

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|   | Column 10 lines 30-39. | The facility receives programming from many sources. Transmissions may be received from satellites by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions can be received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions can be received by antenna, 60, and TV demodulator, 61. Other electronic programming input means, 62, can receive programming transmissions. | Page 324 lines 23-31.                | 87.<br>The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. |
| controlling said switch to communicate at least one of said instruct and said first control signals to a selected one of a plurality of transmitters. | Column 10 lines 40-47. | All of these received transmissions feed into the facility by hard-wire and connect, by means of conventional switches (here matrix switch, 75), to one or more video recorder/players, 76 and 78, and/or to equipment that outputs them over various channels to the cable system's field distribution system, 93, which equipment includes here cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.  | Page 324 line 31 to page 325 line 4. | Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire, a conventional matrix switch, 75, well known in the art, one or more recorder/players, 76 and 78, apparatus that outputs said transmissions over various channels to the cable system's field distribution system, 93, which apparatus includes cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.   |

|  |                        |   |   |   |
|--|------------------------|---|---|---|
| 74. The method of claim 69, further comprising one from the group consisting of: transmitting to a receiver station one or more data that designate a time or a channel of transmission of said instruct signal; and | Column 15 lines 57-62. | The signals for which the decoders are monitoring are likely to be unique digital codes that may identify each programming or data unit received and the source of each. They may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission. | Page 315 lines 20-24.<br><br>Page 44 lines 26-32. | Each one of said decoders is preprogrammed to detect and transfer to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message in the transmission to which its associated apparatus is tuned.<br><br>Commands often contain meter-monitor segments. Said segments contain meter information and/or monitor information, and the information of said segments causes |
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| Claim Language  |  | Support to parent application filed November 3, 1981. |  | Support to instant specification.     |  |
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|   |  | Reference   | Language   | Reference                             | Language   |
|   |  |   |  |                                       | subscriber station signal processor systems to assemble, record, and transmit meter records to remote billing stations and monitor records to remote ratings stations in fashions that are described more fully below.   |
|   |  |   |  | Page 49 line 26 to Page 50 line 4.    | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br>... unique codes for programming; ... and unique codes that identify the sources and suppliers of computer data.<br>... origins of transmissions (eg, network source stations, broadcast stations, cable head end stations); dates and times ...   |
|   |  |   |  | Page 28 lines 26-27.                  | ... <b>monitor information that identifies what programming is available, ...</b>  |
| transmitting to a receiver station one or more data that specify the title of   |  | Column 19 lines 5-8.                                  | In another example, microcomputer, <b>205</b> may be preinformed that a certain television program, hypothetically "Wall Street Week," should be televised on TV set, <b>202</b> , when it is cablecast. | Page 428 lines 21-26.                 | The program-unit-of-interest information preprogrammed at the microcomputer, <b>205</b> , of the station of Figs. 7 and 7C includes particular specific-WSW information that reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.   |
| or some subject matter contained in a unit of mass medium programming or data associated with said instruct signal; and |  | Column 18 lines 52-55.                                | The news services precede each news transmission with a unique signal that uniquely identifies the company or companies to which the news item refers and/or the industries.                             | Page 420 line 32 to page 421 line 17. | Each remote station transmits each particular news item within the particular format of a Transmit-News-Item SPAM message, and receiving any given message in a Transmit-News-Item SPAM message ...<br>In due course, said remote news-service-A station transmits a particular AT&T news item in a particular Transmit-AT&T-News-Item message that is in said Transmit-News-Item SPAM message format and that consists of ... the "program unit identification code" information of said AT&T news item and |

| Claim Language  |                        | Support to parent application filed November 3, 1981.  |  | Support to instant specification.    |  |
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|   |                        | Reference  |  | Reference                            |  |
|   |                        | Language   |  | Language                             |  |
| transmitting to a receiver station a second control signal to cause said receiver station to tune to a broadcast or cablecast transmission containing a specific instruct signal. | Column 19 lines 23-29. | ... microcomputer, 205, may instruct tuner, 214, to switch box, 201, to channel X and may instruct control system, 220, to turn video recorder, 217, on and record "Wall Street Week," and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on and tuner, 215, to tune appropriately to "Wall Street Week." |  |                                      | subject matter information of said binary information of "T", appropriate padding bits, an information segment that contains said AT&T news item, and an end of file signal.   |
|   |                        |  |  | Page 437 lines 1-6.                  | Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, 20.<br>Receiving said please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ... |
|   |                        |  |  | Page 295 lines 6-8.                  | Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its ...   |
|   |                        |  |  | Page 439 lines 9-15.                 | ... to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13; ...  |
|   |                        |  |  | Page 445 lines 24-27.                | ... instructions causes controller, 20, ... to switch power on to video recorder/player, 217, ...  |
|   |                        |  |  | Page 446 lines 18-23.                | ... controller, 20, ... causes recorder/player, 217, to record said information of the "Wall Street Week" program.   |
|   |                        |  |  | Page 445 line 24 to page 446 line 1. | ... instructions causes controller, 20, to switch power on to monitor, 202M, ...<br>Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M, ...   |

| Claim Language | Support to parent application filed November 3, 1981 |          | Support to instant specification. |          |
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|                | Reference  | Language | Reference                         | Language |

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|  |  |  | ... and to tune monitor, 202M, in a predetermined fashion.   |  |
|  |  |  | In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio ... |  |

|   |                        |   |                                     |  |
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| 75. The method of claim 69, wherein said one first control signals further comprise downloadable code | Column 19 lines 46-53. | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, ... upon command. | Page 23 line 35 to page 24 line 16. | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set.") |
|   |                        |   | Page 44 lines 14-17.                | A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function  |

| Claim Language   |  | Support to parent application filed November 3, 1981. |  | Support to instant specification.                            |  |
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|  |  | Reference   | Language   | Reference  | Language   |
| targeted to said processor at one of said plurality of receiver stations, said downloadable code programming |  | Column 19 lines 63-64.                                | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.  | Page 26 lines 20-28.   | or functions. A command is always constituted of at least a<br><br>(Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.) |
|  |  |   |  | Page 26 lines 1-2.<br><br>Page 37 line 26 to page 38 line 8. | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.                     |
| the method in which said at least one processor responds to said first instruct signal.                      |  | Column 19 lines 60-66.                                | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ... | Page 25 line 33 to page 26 line 2..                          | Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...   |
|  |  |   |  | Page 37 line 26 to page 38 line 8.                           | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given  |

| Claim Language   |                        | Support to parent application filed November 3, 1981.  |                                     | Support to instant specification.  |   |
|--|------------------------|--|-------------------------------------|--|---|
|  |                        | Reference  | Language                            | Reference  | Language  |
|  |                        |  |                                     |  | instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
|  |                        |  |                                     | Page 26 lines 4-8.   | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.  |
| 76. The method of claim 69, wherein at least one receiver station is adapted to detect the presence of said one or more first control signals or programmed to respond to said instruct signal on the basis of the location of a signal in an information transmission, said method further comprising the step of | Column 19 lines 42-44. | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   | Page 21 lines 20-24.                | Microcomputer, 205, is preprogrammed to ... respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming transmission.   |   |
|  | Column 19 lines 60-66. | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ... | Page 25 line 33 to page 26 line 2.. | Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ... |   |
|  |                        |  | Page 37 line 26 to page 38 line 8.  | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38,   |   |

| Support to parent application filed November 3, 1981. |                        | Support to instant specification.  |                                    |
|---|------------------------|--|------------------------------------|
| Claim Language  | Reference              | Language   | Reference                          |
|   |                        | 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |                                    |
|   |                        | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   | Page 26 lines 4-8.                 |
|   | Column 19 lines 45-49. | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...  | Page 451 lines 6-7.                |
|   |                        | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.   | Page 23 line 35 to page 24 line 4. |
|   |                        | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber  | Page 37 line 26 to page 38 line 8. |

| Claim Language  |  | Support to parent application filed November 3, 1981. |  | Support to instant specification.   |  |
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|   |  | Reference   | Language   | Reference   | Language   |
| causing at least some of said control signal or instruct signal to be transmitted in said location. |  |   |  |   | station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.  |
|   |  |   |  | Page 24 lines 5-6.  | Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...  |
|   |  |   |  | Page 451 lines 7-9.   | ... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to ...  |
|   |  |   |  | Page 59 lines 29-33.  | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages. |
|   |  | Column 19 lines 60-63.                                | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. | Page 25 line 34 to page 26 line 1.  | At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted.   |
|   |  |   |  | Page 90 lines 4-7.  | The second message is of the information associated with the second combining synch command. Said second command has a "00" header, an execution segment, and a meter-monitor ...  |
|   |  |   |  | Applicants teach this as the composition of the instruction signal of page 25 line 34. See page 26 lines 1-4 and page 20-28, page 89 lines 3-6, and page 90 lines 4-11. | ... instruction signals embedded in the "Wall Street Week" programming transmission.   |
|   |  | Column 19 lines 43-44.                                | ... instruction signals embedded in the "Wall Street Week" programming transmission.   | Page 21 lines 23-24.  |  |

|                                    |                        |   |                      |  |
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| 77. An interactive method for data | Column 20 lines 19-23. | Halfway through the program, the host says, "If you are interested in cooking | Page 471 lines 6-13. | Halfway through the program the host says, "If you are interested in cooking what we are |
|------------------------------------|------------------------|---|----------------------|--|



| Claim Language  |                        | Support to parent application filed November 3, 1981.  |  | Support to instant specification.  |   |
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|   |                        | Reference  |  | Reference  |   |
|   |                        | Language   |  | Language   |   |
| promotion and   |                        | what we are preparing here and want a printed copy of the recipe for a charge of only 10 cents, press 567 on your Widget Signal Generator and Local Input."      |  | preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#". |   |
| delivery for use with   | Column 20 lines 46-49. | When the transmission of the recipe is received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing. |  | Page 473 lines 3-13.   | One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b> ... instructions ...<br><br>... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....<br><br>... causes ... said decoder, 290, to detect and process properly the information of said second message.<br><br>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)<br><br>Receiving said output information causes printer, 221, to print the information of said specific recipe and list. |
| an interactive mass medium program output apparatus, comprising the steps of: | Column 17 lines 47-53. | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site. Consideration of FIGS.            |  | Page 477 lines 23-29.<br><br>Page 478 lines 1-5.<br><br>Page 475 lines 1-2.<br><br>Page 390 lines 30-35.   | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6;  |

| Support to parent application filed November 3, 1981.   |                        | Support to instant specification. |   |
|---|------------------------|-----------------------------------|---|
| Claim Language  | Reference              | Reference                         | Language  |
|   |                        |                                   | and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.   |
|   |                        |                                   | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.  |
| displaying a first mass medium program that promotes first data, said interactive mass medium program output apparatus having   | Column 20 lines 19-23. | Page 396 lines 8-10.              | Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#". |
| an input device to receive input from a subscriber;   | Column 20 lines 23-26. | Page 471 lines 14-21.             | Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ...--enters TV567#, in a fashion well known in the art, at the keyboard of the specific local input, 225, of his own station which causes said input, 225, to transmit a particular preprogrammed process-local-input instruction and said TV567# information to the controller, 20, of the signal processor, 200, of said station.        |
| prompting said subscriber during said first mass medium program to provide subscriber input if said subscriber wants said first data promoted in said step of displaying, | Column 20 lines 19-23. | Page 471 lines 6-13.              | Halfway through the program the host says, "If you are interested in cooking what we are preparing here and want a your own printed copy of the recipe tailored to your own tastes and your own shopping list for a charge of only 10 cents, enter on your Widget Signal Generator and Local Input the information that you see on your screen." The information that appears on the screen of each subscriber is "TV567#". |
| said interactive mass   | Column 20 lines 46-49. | Page 473 lines 3-13.              | One minute later, said program originating  |

| Claim Language   |  | Support to parent application filed November 3, 1981.   |   | Support to instant specification.   |  |
|--|--|---|---|---|--|
|  |  | Reference   | Language  | Reference   | Language   |
| medium program output apparatus having an output device for outputting said first data;  |  |   | received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing. | Page 477 lines 12-17.   | studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b> ... instructions ...<br><br>... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....<br><br>... causes ... said decoder, 290, to detect and process properly the information of said second message.<br><br>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)<br><br>Receiving said output information causes printer, 221, to print the information of said specific recipe and list. |
| receiving a reply from said subscriber at said input device in response to said step of prompting said subscriber, said interactive mass medium program output apparatus having a processor for processing said subscriber reply and controlling delivery of | Column 20 lines 23-26.<br><br>Column 20 lines 31-36. | The viewer then presses buttons 567 on local input, 225, which signal is conveyed to the buffer/comparator, 8 (referring to Fig. 1), of signal processor, 200, ...<br><br>This signal instructs buffer/comparator, 8, that, if 567 has been received from signal generator, 225, signal processor, 200, should, in a predetermined fashion, | Page 471 lines 14-21.<br><br>Page 471 line 26 to page 472 line 17.  | Each subscriber--in particular, the subscriber of the station of Figs. 7 and 7F, ... --enters TV567#, in a fashion well known in the art, at the keyboard of the specific local input, 225, of his own station which causes said input, 225, to transmit a particular preprogrammed process-local-input instruction and said TV567# information to the controller, 20, of the signal processor, 200, of said station.<br><br>Five minutes later, said program originating studio embeds in the transmission of the "Exotic Meals of India" programming and transmits a particular first SPAM message that |  |

| Claim Language   | Support to parent application filed November 3, 1981. | Reference | Language  | Support to instant specification.  | Reference  | Language |
|------------------|---|-----------|---|--|--|----------|
| said first data; |   |           | instruct tuner, 223, to tune cable converter box, 222, to the appropriate channel to receive the recipe in encoded digital form ... | consists of ... check-for-entered-information-and-process instructions, ...<br>At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 20, of signal processor, 200. ...<br>Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory ...<br><br>(An alternate method for inputting said second message to the microcomputers, 205, at stations where TV567# is entered at a local input, 225, is to embed said message in a particular second transmission that is different from the transmission of said "Exotic Meals of India" programming and to cause a selected All signal decoder, 290, at each one of said stations to receive said second transmission, thereby causing said decoder, 290, to detect and transfer the information of said second message to the microcomputer, 205, of said station.<br><br>In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations to cause the tuner, 223, of a selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to establish a programming communication link between said selected converter box, 222, and said decoder, 290; to cause the appropriate receiver apparatus of said decoder, 290, to receive said transmission | Page 476 line 34 to page 477 line 8.<br><br>Page 477 lines 8-17. |          |

| Claim Language   |                        | Support to parent application filed November 3, 1981.  |  | Support to instant specification.  |   |
|--|------------------------|--|--|--|---|
|  |                        | Reference  | Language   | Reference  | Language  |
| delivering instructions at said interactive mass medium program output apparatus     | Column 7 lines 39-49.  | In a pre-determined fashion, buffer/comparator, 8, identifies signal words and/or signal units that must be decrypted, either in whole or in part, and passes identified signal words and/or units to decrypter, 10. Decrypter, 10, uses conventional decrypter techniques, well known in the art, in a pre-determined fashion to decrypt such signals as required. Decrypter, 10, then passes the decrypted signals to processor or monitor, 12. Buffer/comparator, 8, passes signal words and units not identified as requiring decryption directly to processor or monitor, 12. | Page 472 lines 13-23.                              | ...  | Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory and to cause an instance of particular covert control information (which is preprogrammed in said instructions) to be placed at particular control-function-involving information memory of the controller, 39, of decoder, 145, and also at particular control-function-involving information memory of the controller, 39, of decoder, 203. |
| in response to said step of receiving a reply,                                       | Column 20 lines 31-33. | ... that, if 567 has been received from signal generator, 225, signal processor, 200, should, in a predetermined fashion, ...  | Page 473 lines 14-17.                              | At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred ..  | controller, 20, to determine that TV567# information exists at said last-local-input-# memory ...   |
| said instructions controlling said interactive mass medium program output apparatus; | Column 7 lines 50-54.  | Processor or monitor, 12, analyzes, in a pre-determined fashion, the signal words and units that it receives and determines whether they are to be passed to external equipment or to buffer/comparator, 14, for further processing or both.   | Page 472 lines 16-17.<br><br>Page 472 lines 27-32. | (At stations where TV567# information does not exist at last-local-input-# memory of the controllers, 20, said instructions cause said controllers, 20, to cease executing and delete all information of said instructions without placing any information at the decoders, 145 and 203, ... | At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred to the controller, 39, of decoder, 203. Automatically, the controller, 39, of decoder,   |

| Support to parent application filed November 3, 1981.                                     |                        | Support to instant specification.  |   |
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| Claim Language  | Reference              | Language   | Reference   |
| processing said instructions from said step of delivering, said instructions effective to | Column 7 lines 50-58.  | Processor or monitor, 12, analyzes, in a pre-determined fashion, the signal words and units that it receives and determines whether they are to be passed to external equipment or to buffer/comparator, 14, for further processing or both. If a signal or signals are to be passed externally, processor unit, 12, identifies, in a pre-determined fashion, the external equipment to which the signal or signals are addressed and passes them to appropriate jack ports for external transmission. | 145, transmits ...  |
| select and store second data to   | Column 20 lines 37-42. | The signal transmission from processor, 204, also passes a signal word to signal processor, 200,   | Receiving said message causes the controller, 39, of decoder, 203, to load and execute said generate-recipe-and-shopping-list instructions at microcomputer, 205, ...<br><br>In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...<br><br>By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control</b> .")<br><br>... the information of said segments is encrypted prior to transmission ...<br>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st |
|   |                        |  | Page 473 lines 29-31.<br><br>Page 477 lines 8-23.<br><br>Page 281 lines 1-6.<br><br>Page 282 line 2 to page 283 line 33.  |

| Support to instant specification.   |                       |   | Support to parent application filed November 3, 1981.  |                        |
|---|-----------------------|---|--|------------------------|
| Claim Language  | Reference             | Language  | Reference  | Language               |
|   |                       | supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ...<br>Executing said information causes control processor, 39J, ... to locate the location of that particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "11111". |  |                        |
|   | Page 478 lines 1-5.   | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)  | to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.   |                        |
| be used as a source for subsequent processing or presentation of said first data during the course of a second mass medium program; and | Page 473 lines 3-13.  | One minute later, said program originating studio embeds in the transmission of said "Exotic Meals of India" programming and transmits a particular second SPAM message that consists of ... <b>generate-recipe</b> ... instructions ...  | When the transmission of the recipe is received, box 222, transfers the transmission to decrypter, 224, for decryption and thence to printer, 221, for printing. | Column 20 lines 46-49. |
|   | Page 477 lines 12-17. | ... selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to ... link ... said selected converter box, 222, and said decoder, 290; ... said decoder, 290, to receive said transmission....  |  |                        |
|   | Page 477 lines 23-29. | ... causes ... said decoder, 290, to detect and process properly the information of said second message.  |  |                        |
|   | Page 478 lines 1-5.   | (Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example,   |  |                        |

| Claim Language | Support to parent application filed November 3, 1981. |          | Support to instant specification. |          |
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|                | Reference   | Language | Reference                         | Language |

|                                    |                        |   |                       |   |
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|                                    |                        |   |                       | in the method of the first message of example #4.)  |
| delivering said first data         | Column 20 lines 48-49. | ... and thence to printer, 221, for printing.   | Page 475 lines 1-2.   | Receiving said output information causes printer, 221, to print the information of said specific recipe and list.   |
| on the basis of said instructions. | Column 20 lines 33-36. | ... instruct tuner, 223, to tune cable converter box, 222, to the appropriate channel to receive the recipe in encoded digital form ... | Page 473 lines 18-31. | Automatically, the controller, 39, of decoder, 145, transmits particular switching request information to the control processor, 20A, of signal processor, 200, via the aforementioned control information bus means. Receiving said information causes control processor, 20A, to cause matrix switch, 259, to establish a communications link between the controller, 39, of decoder, 145, and the controller, 39, of decoder, 203. Automatically, said controller, 39, of decoder, 145, transfers said message to the controller, 39, of decoder, 203. |
|                                    | Column 20 lines 36-37. | ... and instruct control means, 226, to activate printer, 221.  |                       | Receiving said message causes the controller, 39, of decoder, 203, to load and execute said generate-recipe-and-shopping-list instructions at microcomputer, 205, ...   |

|   |                        |  |                                      |  |
|---|------------------------|--|--------------------------------------|--|
| 78. The method of claim 77, wherein one or more of said instructions is embedded in the non-visible or non-audible portion of a mass medium program | Column 20 lines 27-29. | ... a signal is identified in the incoming programming on TV set, 202, by decoder, 203, ...  | Page 471 line 35 to page 472 line 1. | At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, ...  |
|   | Column 4 lines 5-6.    | These techniques employ signals embedded in programs.  | Page 13 lines 25-26.                 | The present invention employs signals embedded in programming.   |
|   | Column 4 lines 18-22.  | In television they may appear on one line in the video portion of the transmission, or on a portion of one line, or on more than one | Page 14 lines 6-11.                  | In television they may appear on one line in the video portion of the transmission such as line 20 of the vertical interval, or on a portion |



| Claim Language  |                        | Support to parent application filed November 3, 1981.   |   | Support to instant specification. |   |
|---|------------------------|---|---|-----------------------------------|---|
|   |                        | Reference   | Language  | Reference                         | Language  |
| signal.   |                        |   | line, and will probably lie outside the range of the television picture displayed on a normally tuned television set. |                                   | of one line, or on more than one line, and they will probably lie outside the range of the television picture displayed on a normally tuned television set.   |
| 79. The method of claim 77, wherein information evidencing the availability or usage of at least one of said mass medium program, said first data, and said second data are stored or communicated to a remote data collection station, said method further comprising the step of:<br>selecting evidence information that identifies or designates one or more of: | Column 18 lines 30-41. | TV signal decoder, 203, and radio signal decoder, 211, also identify certain signals that monitors or processors, 204 and 210 respectively, determine to identify the programs, etc. on the channels to which TV set, 202, and radio, 209, are tuned, |   | Page 408 lines 18-29              | Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains the "program unit identification code" information of said particular television program, ... Said message is detected at said decoder, 203, and inputted to said controller, 39, in the above described fashion. |
|   |                        |   |   | Page 414 lines 13-27              | Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains secondary "program unit identification code" information of the audio program unit of said radio transmission ...<br>Said message is detected at said decoder, 210, and inputted to said controller, 44.          |
|   |                        |   |   | Page 15 lines 16-22               | The frequencies may convey television, radio, or other programming transmissions. The input transmissions may be received by means of antennas or from hard-wire connections. The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions ...                   |
|   |                        | The processors, 204 and 210, transfer this information to signal processor, 200,  |   | Page 36 lines 32-33.              | Each decoder is controlled by a controller, 39, 44, or 47, that has buffer, microprocessor, ROM, and RAM capacities.  |
|   |                        |   |   | Page 38 lines 11-14.              | Controller, 39, 44, or 47, has capacity for   |

| Claim Language | Support to parent application filed November 3, 1981: |          | Support to instant specification.   |          |
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|                | Reference   | Language | Reference   | Language |
|                |   |          | identifying more than one apparatus to which any given signal should be transferred and for transferring said signal to all said apparatus.<br><br>... because the station of Fig. 7 (and Fig. 7B) is preprogrammed to collect monitor information, receiving said ... message also causes the transmission of monitor information to the onboard controller, 14A, of said signal processor, 200, in the fashion of example #3 above.<br><br>Because the information of said ... message is transmitted periodically in said radio programming transmission, a subsequent instance of said information ... causes the SPAM decoder apparatus ... to transfer to the onboard controller, 14A, of signal processor, 200, ... a particular third transmission of monitor information containing ... "program unit identification code" information of the audio program unit of said radio transmission.<br><br>In the fashion of example #3 above, receiving said first transmission of monitor information causes said onboard controller, 14A, to cause a signal record of prior programming of TV set, 202, to be recorded at the recorder, 16, of signal processor, 200, (and may cause records to be transferred to a remote location) and causes said onboard controller, 14A, to initiate a first signal record, ... that is based on the "program unit identification code" information of said particular television program in<br><br>The station of Fig. 3 is preprogrammed to collect monitor information, ... Under control of said instructions, said match causes control processor, 39J, ... to commence transferring information from control processor, 39J, to buffer/comparator, 14, of signal processor, 200, ... to transfer to said buffer/comparator, |          |
|                |   |          | Page 411 lines 10-15<br><br>Page 418 line 23 to page 419 line 15.<br><br>Page 411 line 28 to page 412 line 2.<br><br>for recording and subsequent transmission to a remote data collection site.  |          |
|                |   |          | Page 173 line 30 to page 174 line 23 from example #3.   |          |

| Claim Language             |  | Support to parent application filed November 3, 1981.   |          | Support to instant specification.  |  |
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|                            |  | Reference   | Language | Reference  | Language   |
| (1) a mass medium program; |  |   |          | 14, ... all of the received binary information of said first message that is recorded at said SPAM-input-signal memory; ... (Said received information is complete information of the first combining synch command, and said information transmitted to buffer/comparator, 14, is called, hereinafter, the "1 <sup>st</sup> " monitor information (#3).")   |  |
|                            |  |   |          | In the fashion described above, receiving said third transmission of monitor information ... causes said onboard controller, 14A, to initiate a third signal record, ... that is based on the aforementioned secondary "program unit identification code" information of the audio program unit of said radio transmission.  |  |
|                            |  | Simultaneously, processor, 200, is also monitoring sequentially all other broadcast transmissions in the locality to gather further data on programming availability to record and transmit to a remote site. |          | [Signal processor 200 in Fig. 7] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring ... said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage. |  |
|                            |  |   |          | Each subscriber station signal processor, 200, operates continuously; scans all incoming channels sequentially at its switch, 1, and mixer, 3, as described in example #5 above; is preprogrammed at its controller, 20, to ...  |  |
|                            |  |   |          | Page 419 lines 4-15.   |  |
|                            |  |   |          | Page 28 lines 25-35.   |  |
|                            |  |   |          | Page 397 lines 17-20.  |  |
|                            |  |   |          | Page 49 lines 26-28.   | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include: |
|                            |  |   |          | Page 50 lines 6-7.   | ... unique identifier codes for each program   |

| Claim Language            |                        | Support to parent application filed November 3, 1981.   |          | Support to instant specification. |  |
|---------------------------|------------------------|---|----------|-----------------------------------|--|
|                           |                        | Reference   | Language | Reference                         | Language   |
|                           | Column 16 lines 32-35. | For example, a person might instruct video cassette recorder, 135, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.  |          | Page 319 lines 30-33.             | unit (including commercials);....<br><br>For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.  |
| (2) a use of programming; | Column 18 lines 30-35. | TV signal decoder, 203, and radio signal decoder, 211, also identify certain signals that monitors or processors, 204 and 210 respectively, determine to identify the programs, etc. on the channels to which TV set, 202, and radio, 209, are tuned, ... |          | Page 408 lines 18-29              | Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains the "program unit identification code" information of said particular television program, ...<br>Said message is detected at said decoder, 203, and inputted to said controller, 39, in the above described fashion. |
|                           |                        |   |          | Page 414 lines 13-27              | Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains secondary "program unit identification code" information of the audio program unit of said radio transmission ...<br>Said message is detected at said decoder, 210, and inputted to said controller, 44.             |
|                           |                        |   |          | Page 15 lines 16-22               | The frequencies may convey television, radio, or other programming transmissions. The input transmissions may be received by means of antennas or from hard-wire connections. The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions ...                      |
|                           |                        |   |          | Page 411 lines 10-15              | ... because the station of Fig. 7 (and Fig. 7B) is preprogrammed to collect monitor information, receiving said ... message also   |

| Claim Language |                         | Support to parent application filed November 3, 1981. |   | Support to instant specification.     |  |
|----------------|-------------------------|---|---|---------------------------------------|--|
|                |                         | Reference   | Language  | Reference                             | Language   |
|                |                         |   |   |                                       | causes the transmission of monitor information to the onboard controller, 14A, of said signal processor, 200, in the fashion of example #3 above.  |
|                |                         |   |   | Page 418 line 23 to page 419 line 15. | Because the information of said ... message is transmitted periodically in said radio programming transmission, a subsequent instance of said information ... causes the SPAM decoder apparatus ... to transfer to the onboard controller, 14A, of signal processor, 200, ... a particular third transmission of monitor information containing ... "program unit identification code" information of the audio program unit of said radio transmission. |
| (3)            | a transmission station; | Column 15 lines 60-62.                                | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission. | Page 49 lines 26-28.                  | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:   |
|                |                         |   |   | Page 50 lines 1-4.                    | ... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...   |
| (4)            | a receiver station;     | Column 16 lines 56-61.                                | ... and, in a predetermined fashion, create a signal string   | Page 180 lines 1-3.                   | Then said process-monitor-info instructions cause onboard controller, 14A, to initiate a new monitor record that reflects the new "Wall Street Week" programming.  |
|                |                         |   | by appending digital information to the received signal which information might   | Page 297 line 15.                     | ...creating a meter record that records the decryption....   |
|                |                         |   |   | Page 180 lines 4-15.                  | Automatically, said instructions cause onboard controller, 14A, in a predetermined fashion, to delete ... except the source mark information associated with said record; to record information of said first named instance of "program unit identification code" information (which is the "program unit identification code" of said "Wall Street Week" program to a particular "program unit   |

| Claim Language |                      | Support to parent application filed November 3, 1981. |  | Support to instant specification.                |  |
|----------------|----------------------|---|--|--|--|
|                |                      | Reference   | Language   | Reference  | Language   |
|                |                      |   | identify the individual decoder, 131, 136, 138, 143, 145, 147, 149, or 150 and the time of receipt at signal processor, 130.   | Page 181 lines 8-14.                             | identification code" location at said record location; to select particular information located at said SPAM-input-signal-@14A register memory and record information at said record location; to select particular preprogrammed record....<br><br>In a predetermined fashion, onboard controller, 14A, also records in a particular monitor record field location at said record location a particular display unit identification code that identifies monitor, 202M, as the display apparatus of said new monitor record. In a predetermined fashion, signal processor, 200, records date and time information received from clock, 18, in first and last particular time field... |
| (5)            | a network;           | Column 16 lines 32-35.<br><br>Column 16 lines 39-41.  | For example, a person might instruct video cassette recorder, 135, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.<br><br>Each discrete bit of this information could be conveyed to recorder, 135, in a signal unit or units in the programming so received and recorded. | Page 319 lines 30-33.<br><br>Page 320 lines 2-8. | For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.<br><br>Each discrete bit of this information could be transmitted to the subscriber station of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information.   |
| (6)            | a broadcast station; | Column 15 lines 60-62.                                | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.  | Page 49 lines 26-28.<br><br>Page 50 lines 1-4.   | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations); dates and times ...   |
| (7)            | a channel on a       | Column 16 lines 35-41.                                | Recorder, 135, might receive the   | Page 319 line 33 to                              | Recorder, 217, might receive the   |

| Claim Language                              |                        | Support to parent application filed November 3, 1981.  |  | Support to instant specification.              |  |
|---|------------------------|--|--|--|--|
|   |                        | Reference  | Language   | Reference                                      | Language   |
| cable system;                               |                        |  | programming over Manhattan Cable TV channel 4 and record the programming from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be conveyed to recorder, 135, in a signal unit or units in the programming so received and recorded. | page 320 line 8.                               | programming over Manhattan Cable TV channel 4 and record the programming at the time of original broadcast transmission--from 7:00 PM to 7:30 PM on the evening of July 15, 1985. Each discrete bit of this information could be transmitted to the subscriber station of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information. |
| (8) a time of transmission;                 | Column 15 lines 60-62. | [The signals for which the decoders are monitoring] may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.                        |  | Page 49 lines 26-28.<br><br>Page 50 lines 1-4. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>... origins of transmissions (eg., network so source stations, broadcast stations, cable head end stations), dates and times ...   |
| (9) a unique identifier datum;              | Column 15 lines 62-63. | [The signals for which the decoders are monitoring] may convey unique identifier codes for each program or commercial.   |  | Page 49 lines 26-28.<br><br>Page 50 lines 6-7. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>...unique identifier codes for each program unit (including commercials);....  |
| (10) a source or supplier of data;          | Column 4 lines 5-6.    | These techniques employ signals embedded in programs.  |  | Page 13 lines 25-26.                           | The present invention employs signals embedded in programming.   |
| (11) a distributor or an advertisement; and | Column 15 lines 65-68. | In the case of data received at the printer, [the signals for which the decoders are monitoring] may identify publications, articles, publishers, distributors, advertisements, etc. |  | Page 321 lines 1-6.                            | Prerecorded, commercially distributed video and audio tapes, videodiscs, so-called "compact discs" of audio, and so-called "CD ROM" discs of data can also contain unique codes, embedded in the prerecorded programming, that identify the use and usage of said programming when said tapes or discs are played. For example, laser disc player, 232, can  |

| Support to parent application filed November 3, 1981. |           | Support to instant specification. |          |
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| Claim Language  | Reference | Reference                         | Language |

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|  |  |  | For example, another of the aforementioned discounts and cents-off coupon specials is of a particular product ... that is advertised ...<br><br>At printer, 221, the printed so-called "hard copy" of said offer and coupon information emerges as:<br>.....<br>15 cents off      15 cents off<br>.....<br>Nabisco Zweiback Teething Toast<br>.....<br>..... |
|  |  |  | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>...unique codes for programming (other than programming identified by program unit codes) whose use obligates users to make payments (eg., royalties and residuals);....   |

|   |                        |  |  |  |
|---|------------------------|--|--|--|
| (12) an indication of a payment obligation. | column 20 lines 49-58. | ...and thence to printer, 221, for printing. Other signal decoder, 227, identifies a signal in the transmission received by printer, 221, which it passes via processor, 228, and buffer/comparator, 14, of signal processor, 200, to data recorder, 16. This signal indicates that the recipe, itself, has been received. Subsequently, when signal processor, 200, transfers the data in its data recorder, 16, via telephone to a remote site, that site can determine for billing purposes that the recipe was, first, ordered and, second, delivered. | Page 49 lines 26-28.<br><br>Page 50 lines 14-17. | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:<br><br>...unique codes for programming (other than programming identified by program unit codes) whose use obligates users to make payments (eg., royalties and residuals);.... |
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| 80. The method of claim 77, wherein said instructions incorporate executable code, said method further | Column 2 line 63 to column 3 line 3. | (The term "signal unit" hereinafter means one complete signal instruction or information message unit. Examples of signal units are a unique code identifying a programming unit, or a unique purchase | Page 14 lines 26-32. | (The term "signal unit" hereinafter means one complete signal instruction or information message unit. Examples of signal units are a unique code identifying a programming unit, or a unique purchase order number identifying |
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| Support to parent application filed November 3, 1981.     |                        | Support to instant specification.  |  |
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| Claim Language  | Reference              | Language   | Reference  |
| comprising the steps of:                                  |                        | the proper use of a programming unit, or a general instruction identifying whether a programming unit is to be retransmitted immediately or recorded for delayed transmission.   |  |
|   | Column 3 lines 3-8.    | <p>order number identifying the proper use of a programming unit, or a general instruction identifying whether a programming unit is to be retransmitted immediately or recorded for delayed transmission.</p> <p>The term "signal word" hereinafter means one full discrete appearance of a signal as embedded at one time in one location on a transmission. Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.</p> | <p>Page 14 line 32 to page 15 line 2.</p> <p>The term "signal word" hereinafter means one full discrete appearance of a signal as embedded at one time in one location on a transmission. Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.</p>  |
| communicating said executable code to said processor; and | Column 17 lines 39-46. | <p>Signal processor apparatus have the ability to identify instruction and information signals in one or more inputted television and radio programming transmissions, identify and discriminate among one or more pieces of external equipment to which such signals are addressed, and transfer such signals to such equipment as directed. This permits many valuable techniques for facilitating the operation of such external equipment.</p>   | <p>The frequencies may convey television, radio, or other programming transmissions.... The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information; ...</p> <p>... identifies the particular apparatus to which said signals are addressed, and outputs said signals to said apparatus ...</p> <p>A command is an instance of signal information that is addressed to particular subscriber station apparatus and that ...</p> <p>Receiving the header and execution segment of said first message causes controller, 39, to determine that said message is addressed to URS microcomputers, 205, and to transfer said message to microcomputer, 205.</p> <p>The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of ultimate receiver stations in</p> |

| Support to parent application filed November 3, 1981.  |                        |   | Support to instant specification.    |  |
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| Claim Language   | Reference              | Language  | Reference                            | Language   |
| performing, on the basis of said executable code, one selected from the group consisting of: | Column 17 lines 45-46. | This permits many valuable techniques for facilitating the operation of such external equipment.  | Page 390 lines 26-29.                | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of ultimate receiver stations in varieties of ways.   |
| (1) receiving a signal containing said data;   | Column 17 lines 62-64. | Signal processor, 200, is always operating and monitors all incoming channels.  | Page 397 lines 17-20.                | Each subscriber station signal processor, 200, operates continuously; scans all incoming channels sequentially at its switch, 1, and mixer, 3, as described in example #5 above;...  |
|  | Column 20 lines 33-36. | ... instruct tuner, 223, to tune cable converter box, 222, to the appropriate channel to receive the recipe in encoded digital form ... | Page 476 line 34 to page 477 line 8. | (An alternate method for inputting said second message to the microcomputers, 205, at stations where TV567# is entered at a local input, 225, is to embed said message in a particular second transmission that is different from the transmission of said "Exotic Meals of India" programming and to cause a selected All signal decoder, 290, at each one of said stations to receive said second transmission, thereby causing said decoder, 290, to detect and transfer the information of said second message to the microcomputer, 205, of said station. |
|  |                        |   | Page 477 lines 8-17.                 | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations to cause the tuner, 223, of a selected converter box, 222, to tune said box, 222, to receive said second transmission; to cause the matrix switch, 258, to establish a programming communication link between said selected converter box, 222, and said decoder, 290; to cause the appropriate receiver apparatus of said decoder, 290, to receive said transmission....  |
|  | Column 20 lines 36-37. | ... and instruct control means, 226, to   | Page 474 lines 3-7.                  | ... instructions causes microcomputer, 205, to   |

| Claim Language   |                        | Support to parent application filed November 3, 1981.   |                        | Support to instant specification.                               |  |
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|  |                        | Reference   | Language               | Reference   | Language   |
| (2) actuating a video, audio, or print output device, as appropriate, to output said data; |                        |   | activate printer, 221. |   | generate information of the specific fish curry recipe and fish curry shopping list of the family of the subscriber of the station of Figs. 7 and 7F; to cause said recipe and shopping list to be printed at printer, 221....   |
|  | Column 18 lines 62-67. | In a predetermined fashion, either microcomputer, 205, or signal processor, 200, instructs tuner, 223, to set cable converter box, 222, to the proper channel, and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing. |                        | Page 423 lines 11-13.<br><br>Page 424 lines 2-9.                | Receiving said message causes said controller, 20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; ....<br><br>Then receiving a particular to-223 instruction from said control processor, 20A, causes controller, 20, to transmits particular instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark. |
|  |                        |   |                        | Page 426 lines 10-18.   | Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.)  |
|  | Column 19 lines 1-4.   | In the same fashion, microcomputer, 205, may also instruct signal processor, 200, to monitor single or multiple television channels and/or radio channels for programming of interest to play or record.  |                        | Page 419 line 34 to page 420 line 2.<br><br>Page 11 lines 5-10. | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.<br><br>The present invention consists of an integrated system of methods and apparatus for   |

| Support to parent application filed November 3, 1981. |  | Support to instant specification.  |                                      |
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| Claim Language  | Reference  | Language   | Reference                            |
|   |  | communicating programming. The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming as well as combined medium programming.   |                                      |
| (3) decrypting at least a portion of said data;       | Column 20 lines 37-42.   | In this alternate method, ... said first SPAM message causes controller, 20, of signal processor, 200, of each one of said stations ... to cause an instance of particular <b>covert control</b> information that is in said instruction to be placed at particular control-function-invoking information memory of the controller, 39, of said decoder, 290. In due course, said programming originating ...  | Page 477 lines 8-23.                 |
|   |  | By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called " <b>covert control.</b> ")  | Page 281 lines 1-6.                  |
|   | which, in a predetermined fashion, signal processor, 200, decrypts and transfers | ... the information of said segments is encrypted prior to transmission ...<br>The ... program originating studio embeds and transmits the 1st supplementary message (#6) before transmitting said second message. Just as is the case with the first message of example #4, ... receiving the 1st supplementary message (#6) causes the apparatus of said station to decrypt said message (using key J) and execute any controlled functions that are invoked by the unencrypted execution segment of said message. ...<br>Executing said information causes control processor, 39J, ... to locate the location of that | Page 282 line 2 to page 283 line 33. |

| Support to parent application filed November 3, 1981.  |                        | Support to instant specification.   |   |
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| Claim Language   | Reference              | Language  | Reference   |
|  |                        |   |   |
|  |                        | to decrypter, 224, to serve as the code upon which decrypter, 224, will decrypt the incoming encrypted recipe.  | Page 478 lines 1-5.   |
|  |                        | In a predetermined fashion, either microcomputer, 205, or signal processor, 200, instructs tuner, 223, to set cable converter box, 222, to the proper channel, and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing. | Page 423 lines 11-13.<br><br>Page 424 lines 2-9.  |
| (4) controlling a selective transfer device to communicate a specific output based on said one or more data to a specific output device; | Column 18 lines 62-67. |   | particular instance of controlled-function-invoking information that is "100110" ... and modify the information at said location to be "111111".<br><br>(Whichever transmission method is employed the information of said second message can be encrypted and caused to be decrypted in any of the methods described above--for example, in the method of the first message of example #4.)<br><br>Receiving said message causes said controller, 20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; ....<br><br>Then receiving a particular to-223 instruction from said control processor, 20A, causes controller, 20, to transmits particular instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark.<br><br>Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.) |
|  | Column 19 lines 1-4.   | In the same fashion, microcomputer, 205,  | Page 419 line 34 to   |

Fig. 7C illustrates methods for monitoring

| Support to parent application filed November 3, 1981.                   |                        | Support to instant specification.   |   |
|---|------------------------|---|---|
| Claim Language  | Reference              | Reference   | Language  |
|   |                        | may also instruct signal processor, 200, to monitor single or multiple television channels and/or radio channels for programming of interest to play or record.   | multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.  |
| (5) generating a receiver specific datum to present with said data; and | Column 19 lines 45-49. | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...<br><br>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. | The present invention consists of an integrated system of methods and apparatus for communicating programming. The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming as well as combined medium programming.  |
|   |                        | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...<br><br>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series. | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...<br><br>Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.   |
|   |                        | Page 37 line 26 to page 38 line 8.  | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
|   |                        | Page 24 lines 5-6.  | Microcomputer, 205, evaluates the initial signal word or words which instruct it to ...   |
|   |                        | Page 451 lines 7-9.   | ... the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to ...   |

| Support to parent application filed November 3, 1981.  |   | Support to instant specification.   |   |
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| Claim Language   | Reference                               | Language  | Reference   |
|  | Column 19 lines 67 to column 20 line 2. | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.   | Page 451 line 3.<br>Page 26 lines 8-11.                                       |
| (6) delivering a receiver specific datum at said interactive mass medium program output apparatus simultaneously or sequentially with said mass medium program or said data. | Column 19 lines 60-66.                  | At this point, an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, ...  | Page 25 line 33 to page 26 line 2..<br><br>Page 37 line 26 to page 38 line 8. |
|  |   | And the Fig. 1C combining is displayed.<br><br>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.<br><br>Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated at said program originating studio, embedded in the programming transmission, and transmitted. Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed ...<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed to ... correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |   |
|  |   | Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV   | Page 26 lines 4-8.  |

| Support to parent application filed November 3, 1981. |   | Support to instant specification.   |  |
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| Claim Language  | Reference   | Language  | Reference  |
| <p>Column 19 line 67 to column 20 line 7.</p>         | <p>The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic. When the two studio generated graphics are no longer displayed, the studio stops sending the instruction signal, and the microcomputer, 205, ceases transmitting its own graphic to TV set, 202, and prepares to send the next locally generated graphic overlay upon instruction from the originating studio.</p> | <p>monitor, 202M.</p> <p>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.</p> <p>And the Fig. 1C combining is displayed.</p> <p>As the program proceeds, in the same fashion a further instruction signal is generated at said studio; transmitted; detected; inputted from decoder, 203, to microcomputer, 205; and executed as "GRAPHICS OFF." Then said studio ceases transmitting the graphic image, and transmits another image such as the host's talking head. Simultaneously, the GRAPHICS OFF command causes microcomputer, 205, to cease overlaying the graphic information onto the received composite video and to commence transmitting the received composite video transmission unmodified. Thereafter the "Wall Street Week" program proceeds, and microcomputer, 205, continues to operate under control of received instructions.</p> <p>Furthermore, it is undesirable to separate computer operations merely because they result in the generation of separate overlays because such separation may result in unnecessary duplication of calculations. For example, the Fig. 1C display of user specific overall stock portfolio performance could be followed by second and third displays that analyze portions of the subscriber's portfolio-- eg., the portion invested in New York Stock Exchange listed stocks in comparison to the so-called "NYSE" index and the portion invested in so-called "over-the-counter" stocks in comparison to the so-called "NASDAQ"</p> | <p>Page 26 lines 8-11.</p> <p>Page 451 line 3.</p> <p>Page 26 line 33 to page 27 line 9.</p> <p>Page 451 line 22 to page 452 line 5.</p> |
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| Support to instant specification.   |  |   |   |
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| Claim Language  | Support to parent application filed November 3, 1981.<br>Reference | Language  | Reference   |
|   |  |   | <p>index. In order to calculate the value of the overall portfolio, it is necessary to calculate the value of these portions. To require that the values of the portions be recalculated for subsequent overlays would be inefficient.</p> <p>In computer-based combined medium communications, the amount of information that a given system can convey is dependent on the efficiency of the employment of program instruction sets and combining synch commands.</p> |
| 81. The method of claim 35, wherein said datum is presented in said mass medium programming.                  | Column 20 lines 48-49.   | ...   | <p>... and thence to printer, 221, for printing.</p> <p>Page 475 lines 1-2.</p> <p>Receiving said output information causes printer, 221, to print the information of said specific recipe and list.</p>  |
| 82. The method of claim 35, wherein said datum is displayed simultaneously with said mass medium programming. | Column 19 lines 67 to column 20 line 2.                            | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic. | <p>Page 451 line 3.</p> <p>Page 26 lines 8-11.</p> <p>And the Fig. 1C combining is displayed.</p> <p>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.</p>  |

**APPENDIX B**

**PATENTABLE SUBJECT MATTER OF  
INSTANT CLAIMS OVER  
APPLICANTS' PATENTED CLAIMS**

The following charts provide a claim by claim comparison of each of Applicants' instant independent claims to of Applicant's independent patented claims<sup>32</sup> as specified in Appendix A of the Office Action. The Office Action stated in paragraphs 22-23 that claims 3-82 are rejected under the judicially created doctrine of obviousness-type double patenting over any single claim or combination of claims of every claim of Applicants' six issued patents. However, the Office Action only compared three of Applicants' patented claims to Applicants' instant independent claims<sup>33</sup>. There was no other analysis to any other of Applicants' patented claims with those of the instant application.

Applicants provide an analysis in Appendix B to show that the instant independent claims are patentably distinct from the specified patented independent claims in Appendix A of the Office Action.

For the Examiner's convenience only, Applicants have underlined portions in the left columns of the instant independent claims to designate the clearest and most succinct portions of the claim language that Applicants believe are patentably distinct from the patented independent claims in the right columns. Applicants assert that any lack of underlining in the instant independent claims in no way indicates these portions are common to the subject matter of the patented claims.

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<sup>32</sup> Claim 1 of U.S. Pat. No. 4,704,725, Claim 1 of U.S. Pat. No. 5,233,654, & Claim 1 of U.S. Pat. No. 4,694,490.

<sup>33</sup> Applicants instant independent claims 3, 13, 17, 19, 22, 27, 35, 39, 43, 47, 55, 59, 61, 64, 69 & 77.

*Instant Independent Claims Patentable Subject Matter over Applicants' Patented Claims*

| Application Claim 3   | U.S. Pat. No. 4,694,490, Claim 1  |
|---|---|
| <p>3. A method of processing signals to select at least one datum with independent receiver specific relevance at a receiver station and deliver at said receiver station a receiver specific programming presentation, said receiver station having a computer and an output device, wherein said computer has a memory location for storing data and said output device outputs one of video, audio, and hardcopy, said method comprising the steps of:</p> <p><u>receiving an information transmission from a remote station and passing at least a portion of said information transmission to said computer, said information transmission including data and at least one instruct signal;</u><br/> <u>detecting an instruct-to-select signal in said information transmission;</u><br/> <u>processing said data at said computer and selecting a plurality of subscriber data;</u><br/> <u>storing said selected plurality of subscriber data at said memory location;</u><br/> <u>receiving mass medium programming from a programming source and outputting said mass medium programming at said output device;</u><br/> <u>selecting subscriber information to output based on said step of storing; and</u><br/> <u>outputting at least one of a simultaneous presentation and a sequential presentation of said mass medium programming and said selected subscriber information.</u></p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,<br/> transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,<br/> receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,<br/> detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p> |

| Application Claim 13   | U.S. Pat. No. 4,694,490, Claim 1   |
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| <p>13. A method of controlling a plurality of receiver stations, each of said plurality of receiver stations including one of a broadcast signal converter and a cablecast signal converter, a signal detector, a processor, wherein each of said plurality of receiver stations is adapted to detect the presence of at least one control signal and programmed to process downloadable code, each of said plurality of receiver stations selecting at least one stored subscriber datum with independent receiver specific relevance, said method comprising the steps of:</p> <p>(1) <u>receiving at a transmitter station said downloadable code which is effective at at least one of said plurality of receiver stations to select said at least one subscriber datum for at least one of simultaneous presentation and a sequential presentation of said at least</u></p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,<br/> transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,</p> |

*Instant Independent Claims Patentable Subject Matter over Applicants' Patented Claims*

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|---|--|
| <p>one subscriber datum with mass medium programming, wherein said downloadable code has a target processor to process data at each of said plurality of receiver stations;</p> <p>(2) <u>transferring said downloadable code from said transmitter station to a transmitter;</u></p> <p>(3) <u>receiving said at least one control signal at said transmitter station, said at least one control signal operating to execute said downloadable code; and</u></p> <p>(4) <u>transferring said at least one control signal from said transmitter station to said transmitter and transmitting an information transmission including said downloadable code and said at least one control signal.</u></p> | <p>receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,</p> <p>detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p> |
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| Application Claim 17  | U.S. Pat. No. 4,694,490, Claim 1  |
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| <p>17. A method of gathering information on the use of at least one of a resource and a control signal at a receiver station, said receiver station having a processor, at least one stored subscriber datum with independent receiver specific relevance, and a controlled device, wherein said receiver station transfers said gathered information to a remote station, said method comprising the steps of:</p> <p>(1) <u>identifying at least one of:</u></p> <p>(a) <u>said resource to select for at least one of simultaneous presentation and sequential presentation with mass medium programming; and</u></p> <p>(b) <u>said control signal which is effective to select said at least one subscriber datum for said at least one of simultaneous presentation and sequential presentation with said mass medium programming;</u></p> <p>(2) <u>monitoring said identified at least one of said resource and said control signal;</u></p> <p>(3) <u>storing a record of the use of said at least one of said resource and said control signal from said step of monitoring; and</u></p> <p>(4) <u>communicating information evidencing said use of said identified at least one of said resource and said control signal from said step of storing from said receiver station to the remote station.</u></p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,</p> <p>transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,</p> <p>receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,</p> <p>detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p> |

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| Application Claim 19 | U.S. Pat. No. 4,694,490, Claim 1 |
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| <p>19. A method of controlling a remote intermediate mass medium programming transmitter station to communicate mass medium programming material to at least one receiver station, said at least one receiver station having at least one stored subscriber datum with independent receiver specific relevance, with said remote intermediate mass medium programming transmitter station including one of a broadcast transmitter and a cablecast transmitter for transmitting said mass medium programming, a plurality of selective transfer devices each operatively connected to said one of said broadcast transmitter and said cablecast transmitter for communicating said mass medium programming, a mass medium programming receiver for receiving said mass medium programming from at least one origination transmitter station, a control signal detector, and one of a controller and a computer capable of controlling at least one of said selective transfer devices, and with said remote transmitter station adapted to detect the presence of at least one control signal , to control the communication of said mass medium programming in response to said at least one control signal , and to deliver at said one of said broadcast transmitter and said cablecast transmitter said mass medium programming, said method comprising the steps of:</p> <p>(1) <u>receiving at said at least one origination transmitter station said mass medium programming to be transmitted by the remote intermediate mass medium programming transmitter station and delivering said mass medium programming to at least one origination transmitter, said mass medium programming having an instruct signal which is effective at said at least one receiver station to select said at least one subscriber datum for at least one of simultaneous presentation and sequential presentation with said mass medium programming;</u></p> <p>(2) <u>receiving said at least one control signal which at the remote intermediate mass medium programming transmitter station operates to control the communication of said mass medium programming; and</u></p> <p>(3) <u>transmitting said at least one control signal from said at least one origination transmitter before a specific time.</u></p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,</p> <p>transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,</p> <p>receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,</p> <p>detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p> |
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| Application Claim 22   | U.S. Pat. No. 4,694,490, Claim 1   |
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| <p>22. A method of controlling at least one of a plurality of receiver stations, each of said plurality of receiver stations including a mass medium programming receiver, a signal detector, at least one computer or processor, at least one stored subscriber datum with independent receiver specific relevance, wherein each of</p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific</p> |

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| <p>said plurality of receiver stations is adapted to detect the presence of at least one control signal and to input a subscriber reaction to an offer communicated in mass medium programming, said method comprising the steps of:</p> <p>(1) <u>receiving at least one of a code and a datum at a transmitter station, said at least one of said code and said datum designating at least one of:</u></p> <p>(a) <u>a product and a service offered in said mass medium programming; and</u></p> <p>(b) <u>said subscriber reaction;</u></p> <p>(2) <u>receiving at said transmitter station an instruct signal which is effective at said at least one of said plurality of receiver stations to select said at least one subscriber datum for at least one of simultaneous presentation and sequential presentation with said mass medium programming;</u></p> <p>(3) <u>transferring at least one of said at least one of said code and said datum and said instruct signal to a transmitter at said transmitter station at a specific time; and</u></p> <p>(4) <u>transmitting said at least one of said at least one of said code and said datum and said instruct signal from said transmitter station.</u></p>  | <p>information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,</p> <p>transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,</p> <p>receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,</p> <p>detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p> |
| <p align="center"><b>Application Claim 27</b></p> <p>27. A method of controlling at least one of a plurality of receiver stations each of said plurality of receiver stations including one of a broadcast signal receiver and a cablecast signal receiver, at least one processor, at least one stored subscriber datum with independent receiver specific relevance, and a signal detector, wherein said signal detector is adapted to receive signals from one of a broadcast signal and a cablecast signal, and wherein said at least one processor is programmed to respond to signals from said signal detector, said method comprising the steps of:</p> <p>(1) <u>receiving at one of a broadcast transmitter station and a cablecast transmitter station at least one instruct signal which is effective at said at least one of said plurality of receiver stations to select said at least one subscriber datum for at least one of simultaneous presentation and sequential presentation with mass medium programming;</u></p> <p>(2) <u>transferring said at least one instruct signal from said one of said broadcast transmitter station and said cablecast transmitter station to a transmitter;</u></p> <p>(3) <u>receiving at least one control signal at said one of said broadcast transmitter station and said cablecast</u></p> | <p align="center"><b>U.S. Pat. No. 4,694,490, Claim 1</b></p> <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,</p> <p>transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,</p> <p>receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,</p> <p>detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated</p>   |

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| <p><u>transmitter station, wherein said at least control signal identifies at least one specific receiver station device to which said at least one instruct signal is addressed; and (4) transferring said at least one control signal from said one of said broadcast transmitter station and said cablecast transmitter station to said transmitter, said one of said broadcast transmitter station and said cablecast transmitter station one of broadcasting and cablecasting said at least one instruct signal and said at least one control signal to said at least one of said plurality of receiver stations.</u></p>   | <p>with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p>  |
| <p align="center"><b>Application Claim 35</b></p> <p>35. A method for mass medium programming promotion and information delivery for use with an interactive television viewing apparatus capable of storing at least one subscriber datum with independent interactive television viewing apparatus specific relevance, said method comprising the steps of:</p> <p><u>outputting television programming that promotes mass medium programming, said interactive television viewing apparatus having an input device to receive input from a subscriber;</u><br/> <u>prompting said subscriber during said television programming whether said subscriber wants said mass medium programming promoted in said step of displaying, said interactive television viewing apparatus having a memory for storing at least one of a code and a datum;</u><br/> <u>receiving a reply from said subscriber at said input device in response to said step of prompting said subscriber, said interactive television viewing apparatus having a processor for processing said subscriber reply; processing said reply from said step of receiving said reply and selecting at least a portion of said at least one of a code and a datum designating said mass medium programming, said interactive television viewing apparatus having a transmitter for communicating information to a remote site;</u><br/> <u>communicating said selected at least a portion of a code and a datum to said remote site, said interactive mass medium output apparatus and said remote site including a network having a plurality of transmitter stations;</u><br/> <u>organizing in said network, at least a first signal which is effective at said interactive television viewing apparatus to deliver said at least one subscriber datum for presentation with said mass medium programming, said interactive television viewing apparatus having a receiver for receiving said first signal from said remote</u></p> | <p align="center"><b>U.S. Pat. No. 4,694,490, Claim 1</b></p> <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,<br/> transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,<br/> receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,<br/> detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p> |



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| <u>station;</u><br><u>delivering said at least said first signal at said interactive</u><br><u>television viewing apparatus; and</u><br><u>outputting said at least one subscriber datum in said</u><br><u>presentation with said mass medium programming on</u><br><u>the basis of said at least said first signal.</u> |  |
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| Application Claim 39   | U.S. Pat. No. 4,694,490, Claim 1  |
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| <p>39. A method for mass medium programming promotion and delivery for use with an interactive mass medium programming output apparatus capable of storing at least one subscriber datum with independent interactive mass medium programming output apparatus specific relevance, said method comprising the steps of:</p> <p><u>outputting mass medium programming that promotes a specific fashion of presenting information to one of complete and supplement said mass medium programming, said interactive mass medium programming output apparatus having an input device to receive input from a subscriber;</u><br/> <u>prompting said subscriber during said mass medium programming whether said subscriber wants said information to one of complete and supplement said mass medium programming presented in said specific fashion promoted in said step of displaying, said interactive mass medium programming output apparatus having an output device for outputting information in said specific fashion;</u><br/> <u>receiving a reply from said subscriber at said input device in response to said step of prompting said subscriber, said interactive mass medium programming output apparatus having a processor for processing said subscriber reply and controlling delivery of said mass medium programming in response to instructions;</u><br/> <u>delivering said instructions at said interactive mass medium programming output apparatus in response to said step of receiving said reply, said instructions controlling said interactive mass medium programming output apparatus;</u><br/> <u>processing said instructions from said step of delivering, said instructions effective to select said at least one subscriber datum for presentation with said mass medium programming; and</u><br/> <u>presenting said information to one of complete and supplement said mass medium programming in said specific fashion on the basis of said instructions.</u></p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,<br/> transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,<br/> receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,<br/> detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p> |

| Application Claim 43                           | U.S. Pat. No. 4,694,490, Claim 1                |
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| 43. A method of controlling a receiver station | 1. A method of communicating television program |

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including at least one stored subscriber datum with independent receiver specific relevance, comprising the steps of:

detecting one of a presence and an absence of one of a broadcast control signal and a cablecast control signal;  
inputting an instruct-to-react signal to a processor based on said step of detecting;  
controlling said processor to output specific information in response to said instruct-to-react signal; and  
selecting said at least one datum for at least one of simultaneous and sequential presentation with mass medium programming on the basis of information received from said processor based on said step of controlling said processor.

material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:

transmitting a video signal containing a television program signal to said receivers,  
transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,  
receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,  
detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.

| Application Claim 47   | U.S. Pat. No. 4,694,490, Claim 1  |
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| <p>47. A method of processing signals to deliver a receiver specific programming presentation at a receiver station, said receiver station having a computer and an output device, with said computer having a memory location for storing data and said output device outputting one of video, audio, and hardcopy, said method comprising the steps of:</p> <p><u>receiving a data transmission from a remote data source and passing said data transmission to said computer;</u><br/> <u>processing said data transmission at said computer and selecting one or more data of interest;</u><br/> <u>storing said selected one or more data of interest at said memory location;</u><br/> <u>receiving mass medium programming from a</u></p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,<br/> transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,<br/> receiving said video signal at a plurality of receiver stations and displaying said program material on the</p> |

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| <u>programming source and outputting said mass medium programming at said output device;</u><br><u>selecting designated information to output, said designated information being the product of processing at least a portion of said selected data; and</u><br><u>outputting a simultaneous or sequential presentation of said mass medium program and said designated output.</u> | video receivers of selected ones of said plurality of receiver stations,<br>detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user. |
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| Application Claim 55  | U.S. Pat. No. 5,233,654, Claim 1   |
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| 55. <u>A method of controlling a plurality of receiver stations each of which includes at least one of a television and radio receiver, a signal detector, a processor, and with each said receiver station adapted to detect the presence of at least one control signal and programmed to process downloadable code, said method of controlling comprising the steps of:</u><br><u>receiving at a transmitter station downloadable code which is effective at a receiver station to select and store one or more data for subsequent processing or presentation during the course of a mass medium program, said downloadable code addressed at each of said plurality of receiver stations to said processor;</u><br><u>transferring said downloadable code from said transmitter station to a transmitter;</u><br><u>receiving said at least one control signal at said transmitter station, said control signal operative at a receiver station to execute said downloadable code; and</u><br><u>transferring said at least one control signal from said transmitter station to said transmitter, and transmitting an information transmission comprising said downloadable code and said at least one control signal.</u> | 1. A system for inputting, processing and collecting response information from members of an audience consisting of a plurality of audience stations, each station accommodating a specific audience member and each station having read/write memory means capable of holding specific data of its audience member, input means for inputting information of its audience member, first storage means for holding its audience member's input, processor means for processing its audience member's input and assembling output records that hold additional information besides said input, second storage means for holding said output records, and transmission means for transferring the output of said second storage means, with at least some of said stations programmed to process input information in a predetermined fashion, a transmission medium for conveying the output of the transmission means of at least some of said audience stations, and<br>at least one data collection station for receiving the output records of said audience stations, processing said records, and collecting the information of said records. |

| Application Claim 59   | U.S. Pat. No. 5,233,654, Claim 1   |
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| 59. <u>A method of gathering information on the use of a resource or a signal at a receiver station, said receiver station having a processor, and a controlled device, said receiver station transferring said gathered information to a remote station, said method comprising the steps of:</u><br><u>identifying a resource to select for subsequent presentation of a mass medium program or a control signal which is effective to select information from one or more processed and stored data for presentation during the course of a mass medium program;</u><br><u>monitoring said resource or said control signal;</u><br><u>storing a record of the use of said resource or said control signal from said step of monitoring; and</u><br><u>communicating information evidencing said use of said</u> | 1. A system for inputting, processing and collecting response information from members of an audience consisting of a plurality of audience stations, each station accommodating a specific audience member and each station having read/write memory means capable of holding specific data of its audience member, input means for inputting information of its audience member, first storage means for holding its audience member's input, processor means for processing its audience member's input and assembling output records that hold additional information besides said input, second storage means for holding said output records, and transmission means for transferring the output of said second storage means, with at least some of said stations programmed to process input information in a predetermined fashion, |

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| <u>resource or said control signal from said step of storing a record from said receiver station to said remote station.</u> | a transmission medium for conveying the output of the transmission means of at least some of said audience stations, and<br>at least one data collection station for receiving the output records of said audience stations, processing said records, and collecting the information of said records. |
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| Application Claim 61   | U.S. Pat. No. 4,694,490, Claim 1  |
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| <p>61. A method of controlling a remote intermediate mass medium transmitter station to communicate mass medium program material to a receiver station, with said remote intermediate mass medium transmitter station including a broadcast or cablecast transmitter, a plurality of selective transfer devices each operatively connected to said broadcast or cablecast transmitter for communicating mass medium programming, a mass medium programming receiver for receiving mass medium programming from at least one remote programming origination source, a control signal detector, and a computer capable of controlling one or more of said selective transfer devices, and with said remote transmitter station adapted to detect the presence of at least one control signal, to control the communication of said mass medium programming in response to said detected at least one control signal, and to deliver from its broadcast or cablecast transmitter mass medium programming, said method comprising the steps of:</p> <p><u>receiving mass medium programming to be transmitted by the remote intermediate mass medium programming transmitter station and delivering said mass medium programming to at least one origination transmitter, said mass medium programming having an instruct signal which is effective at said receiver station to select information from one or more processed and stored data for presentation during the course of a mass medium program;</u></p> <p><u>receiving one or more control signals which at the remote intermediate mass medium programming transmitter station operate to control the communication of at least one of said mass medium programming and said instruct signal; and</u></p> <p><u>transmitting said one or more control signals to said transmitter before a specific time.</u></p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,</p> <p>transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,</p> <p>receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,</p> <p>detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p> |

| Application Claim 64  | U.S. Pat. No. 4,694,490, Claim 1   |
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| <p>64. A method of controlling at least one of a plurality of receiver stations each of which includes a mass medium programming receiver, a signal detector, a computer or processor, and with each receiver station</p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit</p> |

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| <p>adapted to detect the presence of a control signal and to input a subscriber response to an offer communicated in a mass medium programming presentation, said method comprising the steps of:</p> <p><u>receiving a first code or first data at a transmitter station, said first code or data designating at least one of said subscriber response and a product or service offered by said mass medium programming presentation;</u><br/> <u>receiving at said transmitter station a first instruct signal which is effective at said at least one receiver station to select and store one or more second data received in an information transmission for subsequent processing or presentation during the course of said mass medium programming presentation;</u><br/> <u>transferring said first code or first data or said first instruct signal to a transmitter at said transmitter station at a specific time; and</u><br/> <u>transmitting said first code or first data or said first instruct signal from said transmitter station.</u></p> | <p>overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,<br/> transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,<br/> receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,<br/> detecting the presence of said instruct-to-overlay signal at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user.</p> |
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| Application Claim 69  | U.S. Pat. No. 4,694,490, Claim 1  |
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| <p>69. A method of controlling at least one of a plurality of receiver stations each of which includes a broadcast or cablecast signal receiver, a processor, a signal detector, said signal detector adapted to detect signals within a broadcast or cablecast transmission, and said processor programmed to respond to detected signals communicated from said detector, and said method of controlling comprising the steps of:</p> <p><u>receiving at a broadcast or cablecast transmitter station a first instruct signal which is effective at said at least one of a plurality of receiver stations to select and store one or more data for subsequent processing or presentation during the course of a mass medium program;</u><br/> <u>transferring said first instruct signal from said transmitter station to a transmitter;</u><br/> <u>receiving one or more first control signals at said transmitter station, said control signals addressing said first instruct signal to said processor at said at least one</u></p> | <p>1. A method of communicating television program material to a multiplicity of receiver stations each of which includes a television receiver and computer, the computers being adapted to generate and transmit overlay signals to their associated television receivers, said overlay signals causing the display of user specific information related to said program material, and with at least some of said computers being programmed to process overlay modification control signals so as to modify the overlay signals transmitted to their associated receivers, each of said computers being programmed to accommodate a specific user application, comprising the steps of:</p> <p>transmitting a video signal containing a television program signal to said receivers,<br/> transmitting an instruct-to-overlay signal to said receiver stations at a time when the corresponding overlay is not being displayed,<br/> receiving said video signal at a plurality of receiver stations and displaying said program material on the video receivers of selected ones of said plurality of receiver stations,<br/> detecting the presence of said instruct-to-overlay signal</p> |

*Instant Independent Claims Patentable Subject Matter over Applicants' Patented Claims*

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| <u>of a plurality of receiver stations; and transferring said one or more first control signals from said transmitter station to said transmitter, said transmitter station broadcasting or cablecasting said first instruct signal and said one or more first control signals to said plurality of receiver stations.</u> | at said selected receiver stations and coupling said instruct-to-overlay signal to the computers associated with the video receivers of said selected stations, and causing said last named computers to generate and transmit their overlay signals to their associated television receivers in response to said instruct-to-overlay signal, thereby to present a display at the selected receiver stations including the television program material and the related computer generated overlay, the overlays displayed at a multiplicity of said receiver stations being different, with each display specific to a specific user. |
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| Application Claim 77   | U.S. Pat. No. 4,704,725, Claim 1  |
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| <p>77. An interactive method for data promotion and delivery for use with an interactive mass medium program output apparatus, comprising the steps of:</p> <p><u>displaying a first mass medium program that promotes first data, said interactive mass medium program output apparatus having an input device to receive input from a subscriber;</u></p> <p><u>prompting said subscriber during said first mass medium program to provide subscriber input if said subscriber wants said first data promoted in said step of displaying, said interactive mass medium program output apparatus having an output device for outputting said first data;</u></p> <p><u>receiving a reply from said subscriber at said input device in response to said step of prompting said subscriber, said interactive mass medium program output apparatus having a processor for processing said subscriber reply and controlling delivery of said first data;</u></p> <p><u>delivering instructions at said interactive mass medium program output apparatus in response to said step of receiving a reply, said instructions controlling said interactive mass medium program output apparatus;</u></p> <p><u>processing said instructions from said step of delivering, said instructions effective to select and store second data to be used as a source for subsequent processing or presentation of said first data during the course of a second mass medium program; and</u></p> <p><u>delivering said first data on the basis of said instructions.</u></p> | <p>1. A method of communicating data to a multiplicity of receiver stations, each of which includes a computer adapted to generate and transmit user specific signals to one or more associated output devices, with at least some of said computers being programmed to process modification control signals so as to modify the user specific signals transmitted to their associated output devices, each of said computers being programmed to accommodate a special user application, comprising the steps of:</p> <p>transmitting an instruct-to-process signal to said computers to cause each of said computers to process data in accordance with its associated special user application,</p> <p>transmitting an instruct-to-output signal to said computers at a time when the corresponding user specific information is not being transmitted to an output device,</p> <p>detecting the presence of said instruct-to-output signal at selected receiver stations and coupling said instruct-to-output signal to the computers associated with said selected stations, and</p> <p>causing said last named computers simultaneously to output their user specific signals to their associated output devices in response to said instruct-to-output signal, thereby to transmit to the selected output devices an output signal comprising said data and said related user specific signals, the output signals at a multiplicity of said output devices being different, with each output signal specific to a specific user.</p> |

**APPENDIX C**

**CORRELATION CHARTS**  
**BETWEEN**  
**THE PARENT 1981 PRIORITY SPECIFICATION**  
**(as referenced to column and line numbers of U.S. Pat. No. 4,694,490)**  
**AND**  
**THE INSTANT 1987 PRIORITY SPECIFICATION**

I. COLUMN I

|                       |   |   |   |
|-----------------------|---|---|---|
| Column 1 lines 1-22.  | <p><b>SIGNAL PROCESSING APPARATUS AND METHODS</b></p> <p><b>BACKGROUND OF THE INVENTION</b></p> <p>At the present time, vast amounts of programing are transmitted through various media throughout the United States which programing is handled with significant degrees of manual processing as different, discrete units of programing transmitted on single channel systems. Broadcasters and cablecasters transmit programing with the expectation that viewers in one place tune to only onechannel at a time.</p> <p>On occasion and on a limited scale, the co-ordination of two media and two channels has occurred. Such co ordination has taken the form of stereo simulcasts where one local television station broadcasts a program, generally of classical music, and simultaneously, a local radio station broadcasts the same music in stereo. But such simulcasts require significant degrees of manual processing at both the points of origination and reception.</p> | Page 7 lines 7-12.  | [The prior art] has no capacity for coordinating the programming content transmitted by any given peripheral system with any other programming transmitted to a television receiver. It has no capacity for controlling two separate systems such as, for example, an automatic radio and television stereo simulcast.  |
| Column 1 lines 23-28. | Today great potential exists for a significant increase in the scope and scale of multimedia and multichannel presentations. This increase is desirable because it will increase variety and add substantially to the richness of presentations as regards both entertainment and the communications of ideas and information.  | Page 2 lines 20-23.   | Unlocking this potential is desirable because these new media will add substantial richness and variety to the communication of ideas, information and entertainment.   |
| Column 1 lines 29-35. | This potential arises out of two simultaneous, independent trends. One is the development and growth of the so-called cable television industry whose member companies deliver locally not one but many channels of programing. The other is the widespread and growing ownership of computers, especially microcomputers in homes.   | Page 2 lines 8-11.  | Today great potential exists for combining the capacity of broadcast communications media to convey ideas with the capacity of computers to process and output user specific information.   |
| Column 1 lines 36-41. | It is the object of this invention to unlock this potential by the development of means and methods which permit programing to communicate with equipment that is external to television and radio receivers, particularly computers and computer peripherals such as printers.   | Page 3 lines 30-33,<br><br>Page 2 line 25 to page 3 line 8. | It is the object of this invention to unlock this great potential in the fullest measure by means of an integrated system of programming communication that joins together all these capacities most efficiently.<br><br>To unlock this potential fully requires means and methods for combining and controlling receiver systems that are now separate--television and computers, radio and computers, broadcast print and computers, television and computers and |



| 1987 Spec Reference                    | 1987 Language | 1987 Spec Reference | 1987 Language |
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| <i>Specification Correlation Chart</i> |               |                     |               |

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|                       |  |                      | <p>broadcast print, etc.</p> <p>But it requires much more.</p> <p>To unlock this potential fully requires a system with efficient capacity for satisfying the demands of subscribers who have little receiver apparatus and simple information demands as well as subscribers who have extensive apparatus and complex demands. It requires capacity for transmitting and organizing vastly more information and programming than any one-channel transmission system can possibly convey at one time. It requires capacity for controlling intermediate transmission stations that receive information and programming from many sources and for organizing the information and programming so as to make the use of the information and programming at ultimate receiver stations as efficient as possible.</p>   |
| Column 1 lines 42-44  | It is the further purpose of this invention to provide means and methods to process and monitor such transmissions and presentations at individual receiver sites...   | Page 3 lines 9-29.   | <p>To unlock this potential also requires efficient capacity for providing reliable audit information to (1) advertisers and others who pay for the transmission and performance of programming and (2) copyright holders, pay service operators, and others such as talent who demand, instead, to be paid. This requires capacity for identifying and recording (1) what television, radio, data, and other programming and what instruction signals are transmitted at each transmission station and (2) what is received at each receiver station as well as (3) what received programming is combined or otherwise used at each receiver station and (4) how it is received, combined, and/or otherwise used.</p> <p>Moreover, this system must have the capacity to ensure that programming supplied for pay or for other conditional use is used only in accordance with those conditions. For example, subscriber station apparatus must display the commercials that are transmitted in transmissions that advertisers pay for. The system must have capacity for decrypting, in many varying ways, programming and instruction signals that are encrypted and for identifying those who pirate programming and inhibiting piracy.</p> |
| Column 1 lines 45-49. | ...and to control, in certain ways, the use of transmitted programming and the operation of certain associated equipment. Such receiver sites may be stations or systems that intend to retransmit the programming, or they may be end users of the programming. | Page 11 lines 23-27. | <p>It is the further purpose of this invention to provide means and methods whereby a simplex point-to-multipoint transmission (such as a television or radio broadcast) can cause simultaneous generation of user specific information at a plurality of subscriber stations.</p>  |

| 1981 Spec. Reference                  | 1981 Language  | 1987 Spec Reference                          | 1987 Language   |
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| Column 1 lines 49-53.                 | The present invention contemplates that certain data may be encrypted and that certain data collected from such processing and monitoring will automatically be transferred to a remote geographic location or locations.  | Page 13 lines 5-9.                           | In the present invention, certain monitored signals may be encrypted, and certain data collected from such monitoring may be automatically transferred from subscriber stations to one or more remote geographic stations.  |
| Column 1 lines 54-57.                 | In the prior art, there have been attempts to develop systems to control programming and systems to monitor programming, but the two have been treated as separate systems, and each has had limited capacity.   | Page 2 lines 25-30.                          | To unlock this potential fully requires means and methods for combining and controlling receiver systems that are now separate--television and computers, radio and computers, broadcast print and computers, television and computers and broadcast print, etc.  |
| Column 1 line 58 to column 2 line 27. | As regards control systems, cueing systems and equipment now exist that transmit instructions to operating equipment at receiver sites by means of tone signals that are carried, in television transmissions, in the audio portion and may be heard by the human ear. Such systems and devices are used to turn on equipment such as videotape players and recorders that have been manually loaded and to tell such equipment how long to run. Such systems operate by transmitting operating signals that precede and follow programming and are called "headers" and "trailers" respectively. The use of headers and trailers limits prior art in that headers and trailers can become separated from programming, thereby hampering automatic operations. Such prior art techniques have lacked the capacity to process the programming in various ways including to instruct receiver end equipment what specific programming to select to play or record other than that immediately at hand, how to load it on player or recorder equipment, when and how to play it or record it other than immediately, how to modify it, what equipment or channel or channels to transmit it on, when to transmit it, and how and where to file it or refile it or dispose of it. (Within television studios that are original transmitters of programming, certain systems and equipment do exist for certain automatic co-ordination of players, loaders, and other equipment; however, manual instructions still must be given, on site, for the co-ordination of such equipment which instructions are transmitted electronically on hard-wire channels that are strictly separate from the channels on which the programming is transmitted and such instructions are never broadcast.) Such prior art systems and equipment have lacked the capacity to automatically coordinate multi-channel and multi-media presentations. They have lacked the capacity to decrypt encrypted | Generally, page 4 line 17 to page 7 line 22. | <p>This prior art is limited. It only transmits data; it does not control data processing. No system is preprogrammed to simultaneously control a plurality of central processor units, operating systems, and pluralities of computer peripheral units. None has capacity to cause simultaneous generation of user specific information at a plurality of receiver stations. None has any capacity to cause subscriber station computers to process received data, let alone in ways that are not inputted by the subscribers. None has any capacity to explain automatically why any given information might be of particular interest to any subscriber or why any subscriber might wish to select information that is not selected or how any subscriber might wish to change the way selected information is processed.</p> <p>... This prior art, too, is limited. It has no capacity to overlay any information other than information transmitted to all receiver stations simultaneously. It has no capacity to overlay any such information except in the order in which it is received. It has no capacity to cause receiver station computers to generate any information whatsoever, let alone user specific information. It has no capacity to cause overlays to commence or cease appearing at receiver stations, let alone commence and cease appearing periodically.</p> <p>As regards the automation of intermediate transmission stations, various so-called "cueing" systems in the prior art operate in conjunction with network broadcast transmissions to automate the so-called "cut-in" at local television and radio stations of locally originated programming such as so-called "local spot" advertisements.</p> <p>... This prior art, too, is limited. It has no capacity to schedule</p> |

**Specification Correlation Chart**

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|  | processing signals. They have lacked the capacity to monitor whether receiver-end equipment are following instructions properly. |  | <p>automatically or transmit any programming other than that loaded immediately at the play heads of the controlled video players. It has no capacity to load the video players or identify what programming is loaded on the players or verify that scheduled programs are played correctly. It has no capacity to cause the video players to record programming from any source. It has no capacity to receive programming transmissions or process received transmissions in any way. It has no capacity to operate under the control of instructions transmitted by broadcasters. It has no capacity to insert signals that convey information to or control, in any way, the automatic operation of ultimate receiver station apparatus other than television receivers.</p> <p>... This prior art, too, is limited. It has no capacity for interconnecting or operating a system at any time other than the time when the order to do so is entered manually at the system or remote keyboard. It has no capacity for acting on instructions transmitted by broadcasters to interconnect, actuate or tune systems peripheral to a television receiver or to actuate a television receiver or automatically change channels received by a receiver. It has no capacity for coordinating the programming content transmitted by any given peripheral system with any other programming transmitted to a television receiver. It has no capacity for controlling two separate systems such as, for example, an automatic radio and television stereo simulcast. It has no capacity for selectively connecting radio receivers to radio peripherals such as computers or printers or speakers or for connecting computers to computer peripherals (except perhaps a television set). It has no capacity for controlling the operation of decryptors or selectively inputting transmissions to decryptors or outputting transmissions from decryptors to other apparatus. It has no capacity for monitoring and maintaining records regarding what programming is selected or played on any apparatus or what apparatus is connected or how connected apparatus operate.</p> |
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**II. COLUMN 2**

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| Column 2 lines 28-62. | As regards monitoring systems, various systems and devices have been developed to determine what programming | Generally page 7 line 23 to page 9 line 5. | The prior art includes a variety of systems for monitoring programming and generating so-called "ratings." One system |
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**Specification Correlation Chart**

is played on television. One such system for monitoring programs is described in U.S. Patent to Haselwood, et al. No. 4,025,851. Another that monitors by means of audio codes that are only "substantially inaudible" is described in U.S. Patent to Crosby No. 3,845,391. Recently devices, called addressable converters, have been developed that facilitate so-called pay-per-view marketing of programming by monitoring what individual television receivers tune to and either permitting or preventing the tuners to tune to given frequencies satisfactorily. Such prior art techniques and equipment have been limited to monitoring single broadcast stations, channels or units and have lacked the ability to monitor multimedia presentations. They have been able to monitor only the audio or the video portion of television transmissions. They have been able either to monitor what is transmitted over one channel or what is received by one or more receivers but not both. They have lacked the capacity to record and transfer information simultaneously. They have been unable to decrypt encrypted signals. They have been able to monitor only single signal word types or word lengths that are placed, within the transmissions, in locations that are unvarying and unvariable. They have lacked the capacity to compare, assemble, and/or evaluate multi-word, multi-location signals. Except in the possible case of addressable converters, they have been unable to distinguish the absence of signals or signal words in transmissions. They have lacked the capacity to communicate processing instructions to external equipment as described in the paragraph above. It is the object of the present invention to overcome these and other deficiencies of the prior art.

that monitors by means of embedded digital signals is described in U.S. Patent to Haselwood, et al. No. 4,025,851. Another that monitors by means of audio codes that are only "substantially inaudible" is described in U.S. Patent to Crosby No. 3,845,391. A third that automatically monitors a plurality of channels by switching sequentially among them and that includes capacity to monitor audio and visual quality is described in U.S. Patent to Greenberg No. 4,547,804.

This prior art, too, is limited. It has capacity to monitor only single broadcast stations, channels or units and lacks capacity to monitor more than one channel at a time or to monitor the combining of media. At any given monitor station, it has had capacity to monitor either what is transmitted over one or more channels or what is received on one or more receivers but not both. It has assumed monitored signals of particular format in particular transmission locations and has lacked capacity to vary formats or locations or to distinguish and act on the absence of signals or to interpret and process in any fashion signals that appear in monitored locations that are not monitored signals. It has lacked capacity to identify encrypted signals then decrypt them. It has lacked capacity to record and also transfer information to a remote geographic location simultaneously.

As regards recorder/player systems, many means and methods exist in the prior art for recording television or audio programming and/or data on magnetic, optical or other recording media and for retransmitting prerecorded programming. Video tape recorders have capacity for automatic delayed recording of television transmissions on the basis of instructions input manually by viewers. So-called "interactive video" systems have capacity for locating prerecorded television programming on a given disc and transmitting it to television receivers and locating prerecorded digital data on the same disc and transmitting them to computers.

This prior art, too, is limited. It has no capacity for automatically embedding signals in and/or removing embedded signals from a television transmission then recording the transmission. It has no capacity for controlling the connection or actuation or tuning of external apparatus. It has no capacity for retransmitting prerecorded

| 1981 Spec Reference                    | 1981 Language | 1987 Spec Reference | 1987 Language |
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| <b>Specification Correlation Chart</b> |               |                     |               |

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|                                      |   |                      | programming and controlling the decryption of said programming, let alone doing so on the basis of signals that are embedded in said programming that contain keys for the decryption of said programming. It has no capacity for operating on the basis of control signals transmitted to recorder/players at a plurality of subscriber stations, let alone operating on the basis of such signals to record user specific information at each subscriber station. |
| Column 2 lines 63-64.                | (The term "signal unit" hereinafter means one complete signal instruction or information message unit.                                      | Page 14 lines 26-27. | (The term "signal unit" hereinafter means one complete signal instruction or information message unit.  |
| Column 2 lines 65-66.                | Examples of signal units are a unique code identifying a programming unit,...   | Page 14 lines 27-29. | Examples of signal units are a unique code identifying a programming unit, ....   |
| Column 2 lines 66-67.                | ...or a unique purchase order number identifying the proper use of a programming unit,...   | Page 14 lines 27-30. | Examples of signal units are...a unique purchase order number identifying the proper use of a programming unit, or ....   |
| Column 2 line 67 to column 3 line 3. | ...or a general instruction identifying whether a programming unit is to be retransmitted immediately or recorded for delayed transmission. | Page 14 lines 27-32. | Examples of signal units are...a general instruction identifying whether a programming unit is to be retransmitted immediately or recorded for delayed transmission.  |

### III. COLUMN 3

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| Column 3 lines 3-5.   | The term "signal word" hereinafter means one full discrete appearance of a signal as embedded at one time in one location on a transmission.  | Page 14 lines 32-35.               | The term "signal word" hereinafter means one full discrete appearance of a signal as embedded at one time in one location on a transmission.  |
| Column 3 lines 6-8.   | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   | Page 14 line 35 to page 15 line 2. | Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.   |
| Column 3 lines 8-12.  | Such strings may or may not have predetermined data bits to identify the beginnings and ends of words. Signal words may contain parts of signal units, whole signal units, or groups of partial or whole signal units or combinations.)   | Page 15 lines 2-6.                 | Such strings may or may not have predetermined data bits to identify the beginnings and ends of words. Signal words may contain parts of signal units, whole signal units, or groups of partial or whole signal units or combinations.)   |
| Column 3 lines 13-27. | It is a further object of the present invention to process and monitor signals on numerous channels by sequentially scanning each channel in a predetermined manner which manner may be varied. It is also an object of the present invention to prevent unauthorized use of signals and programming by permitting signal encryption, the variation of word numbers, word lengths, word compositions, and/or word locations. It is also an object of this system to process different signal words in different ways. It is also an object of | Page 3 lines 21-21/9.              | Moreover, this system must have the capacity to ensure that programming supplied for pay or for other conditional use is used only in accordance with those conditions. For example, subscriber station apparatus must display the commercials that are transmitted in transmissions that advertisers pay for. The system must have capacity for decrypting, in many varying ways, programming and instruction signals that are encrypted and for identifying those who pirate programming and inhibiting piracy. |

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|                       | the present invention to provide a record of signals that may be transferred to a geographically distant location on command or predetermined instruction.<br>Other objects of this invention will appear from the following descriptions and the appended claims.                                     |  |  |  |
| Column 3 line 29.     | <b>SUMMARY OF THE INVENTION</b>  |  | See generally page 11 line 4 to page 14 line 30. | <b>SUMMARY OF THE INVENTION</b>  |
| Column 3 lines 30-31. | The present invention consists of methods and apparatus with several forms.  |  | Page 16 lines 15-27.                             | A central objective of the present invention is to provide flexibility in regard to installed station apparatus. At any given time, the system must have capacity for wide variation in individual station apparatus in order to provide individual subscribers the widest range of information options at the least cost in terms of installed equipment. Flexibility must exist for expanding the capacity of installed systems by means of transmitted software and for altering installed systems in a modular fashion by adding or removing components. Flexibility must exist for varying techniques that restrict programming to duly authorized subscribers in order to identify and deter pirates ... |
| Column 3 lines 32-37. | One method provides a technique whereby a broadcast or cablecast transmission facility can duplicate the operation of a television studio automatically through the use of instruction and information signals embedded in programming either supplied from a remote source or sources or prerecorded. |  | Page 12 lines 18-24.                             | It is the further purpose of this invention to provide means and methods for the automation of intermediate transmission stations that receive and retransmit programming. The programming may be delivered by any means including over-the-air, hard-wire, and manual means. The stations may transmit programming over-the-air (hereinafter, "broadcast") or over hard-wire (hereinafter, "cablecast").  |
| Column 3 lines 37-39. | The programming may be delivered to the transmission facility by any means including broadcast, hard-wire, and manual means.   |  | Page 11 lines 16-19.                             | ... the present invention has capacity for transmitting data and control instructions in the same information stream to many different apparatus at a given subscriber station, for causing computers to generate and transmit programming, ...  |
| Column 3 lines 39-41. | The transmission facility may transmit a single channel or multiple channels of programming.   |  | Page 12 lines 21-24.                             | The programming may be delivered by any means including over-the-air, hard-wire, and manual means. The stations may transmit programming over-the-air (hereinafter, "broadcast") or over hard-wire (hereinafter, "cablecast").   |
| Column 3 lines 41-45. | The method includes a monitoring technique to construct a record for each transmitted channel that duplicates the log that the Federal Communications Commission requires broadcast station operators to maintain.   |  | Page 12 lines 25.                                | They may transmit single channels or multiple channels.  |
|                       |  |  | Page 12 lines 25-29.                             | The present invention includes capacity for automatically constructing records for each transmitted channel that duplicate the logs that the Federal Communications Commission requires broadcast station operators to maintain.   |

**Specification Correlation Chart**

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| Column 3 lines 45-47. | The method permits the transfer of such records to a predetermined site or sites in a predetermined fashion or fashions.   | Page 337 lines 19-21                           | And said signal processor apparatus can transmit such records of programming to remote sites via telephone or other data transfer networks, 97 and 99 respectively.   |
| Column 3 lines 48-51. | Another method has application at receiver sites such as private homes or public places like theaters, hotels, brokerage offices, etc., whether commercial establishments or not.  | Page 12 lines 30-35.                           | It is the further purpose of this invention to provide means and methods for the automation of ultimate receiver stations, ... Such ultimate receiver stations may be private homes or offices or commercial establishments such as theaters, hotels, or brokerage offices.   |
| Column 3 lines 51-56. | This method provides techniques whereby, automatically, single channel, single medium presentations, be they television, radio, or other electronic transmissions, may be recorded, co-ordinated in time with other programming previously transmitted and recorded, or processed in other fashions. | Page 12 lines 30-33.<br><br>Page 2 lines 8-19. | It is the further purpose of this invention to provide means and methods for the automation of ultimate receiver stations, especially the automation of combined medium and multi-channel presentations.<br><br>Today great potential exists for combining the capacity of broadcast communications media to convey ideas with the capacity of computers to process and output user specific information. One such combination would provide a new radio-based or broadcast print medium with the capacity for conveying general information to large audiences--e.g., "Stock prices rose today in heavy trading,"--with information of specific relevance to each particular user in the audience--e.g., "but the value of your stock portfolio went down." (Hereinafter, the new media that result from such combinations are called "combined" media.)<br><br>... methods for combining and controlling receiver systems that are now separate--television and computers, radio and computers, broadcast print and computers, television and computers and broadcast print, etc. |
| Column 3 lines 56-60. | Multimedia presentations may be co-ordinated in time and/or in place as, for example, when real-time video programming is co-ordinated with presentations from a microcomputer working with data supplied earlier.   | Page 13 lines 10-13.<br><br>Page 12 lines 3-9. | It is a further purpose of this invention to provide means and methods for recording combined media and/or multi-channel programming and for playing back prerecorded programming of such types.<br><br>It is the further purpose of this invention to provide means and methods whereby a simplex broadcast transmission can cause periodic combining of relevant user specific information and conventional broadcast programming simultaneously at a plurality of subscriber stations, thereby integrating the broadcast information with each user's own information.   |

**Specification Correlation Chart**

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|                                      |  |  | <p>Today great potential exists for combining the capacity of broadcast communications media to convey ideas with the capacity of computers to process and output user specific information. One such combination would provide a new radio-based or broadcast print medium with the capacity for conveying general information to large audiences--e.g., "Stock prices rose today in heavy trading,"--with information of specific relevance to each particular user in the audience--e.g., "but the value of your stock portfolio went down." (Hereinafter, the new media that result from such combinations are called "combined" media.)</p> | <p>Page 2 lines 8-19.</p>    |
|                                      |  |  | <p>This television based combined medium is but one example of many combined media.</p>  | <p>Page 28 lines 2-3.</p>    |
| Column 3 lines 60-66.                |  | <p>This method provides techniques whereby the timing and fashion of the playing, processing, and co-ordination of a presentation or presentation may be determined at the time and place of transmission or of presentation, either in whole or in part, either locally or remotely, or a combination of these factors.</p> | <p>It is the further purpose of this invention to provide means and methods whereby a simplex point-to-multipoint transmission (such as a television or radio broadcast) can cause simultaneous generation of user specific information at a plurality of subscriber stations. One advantage of the present invention is great ease of use. For example, as will be seen, a subscriber can cause his own information to be processed in highly complex ways by merely turning his television receiver on and tuning to a particular channel.</p>   | <p>Page 11 lines 23-31.</p>  |
|                                      |  |  | <p>(To accomplish all this has required only that the subscriber of microcomputer, 205, [and other subscribers at other stations] cause the installation and connection of the apparatus shown in the figures of this submission, especially Fig. 7 (and 7C); caused his microcomputer, 205, to be preprogrammed as described above; and preinformed microcomputer, 205, of his wish to view said "Wall Street Week" program by causing the aforementioned select-WSW information to be recorded at said microcomputer, 205.) ....</p>   | <p>Page 450 lines 27-35.</p> |
| Column 3 line 66 to column 4 line 2. |  | <p>The method provides monitoring techniques to develop data on patterns of viewership and to permit the determination of specific usage at individual receiving sites for various purposes including, for example, the billing of individual customers.</p>   | <p>It is the further purpose of this invention to provide means and methods for identifying and recording what television, radio, data, and other programming is transmitted at each transmission station, what programming is received at each receiver station, and how programming is used. In the present invention, certain monitored signals may be encrypted, and certain data collected from such monitoring may be automatically transferred from subscriber stations to one or more remote geographic stations.</p>  | <p>Page 13 lines 1-9.</p>    |



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|  |  | Page 28 lines 29-35. | It has capacity for transferring said meter records automatically to one or more remote automated billing stations that account for programming and information consumption and bill subscribers and said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage. |
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#### IV. COLUMN 4

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| Column 4 lines 2-4.   | The method provides techniques whereby unauthorized use of programming and/or of signals may be prevented.   | Page 13 lines 14-17.                  | It is a further purpose of this invention to provide a variety of means and methods for restricting the use of transmitted communications to only duly authorized subscribers.  |
| Column 4 lines 5-6.   | These techniques employ signals embedded in programs.  | Page 13 lines 25-26.                  | The present invention employs signals embedded in programming.  |
| Column 4 line 6.      | The advantage of such embedded signals,...   | Page 13 line 26.                      | Embedded signals provide several advantages.  |
| Column 4 lines 6-9.   | ...as compared to header and trailer signals, is that they cannot become separated inadvertently from the programming and, thereby, inhibit automatic processing,... | Page 13 lines 27-28.                  | They cannot become separated inadvertently from the programming and, thereby, inhibit automatic processing.   |
| Column 4 lines 9-12.  | ...that they can convey signals to equipment that must switch manners or modes of operation during transmissions of individual units of programming,...              | Page 13 lines 28-31.                  | They occur at precise times in programming and can synchronize the operation of receiver station apparatus to the timing of programming transmissions.  |
| Column 4 lines 12-13. | ...and that they can be monitored.   | Page 13 lines 31-32.                  | They can be conveniently monitored.   |
| Column 4 lines 13-14. | (The techniques described here may use headers and trailers from time to time.)  | Page 344 line 33 to page 345 line 14. | Separating the transmission of the end of each program unit and the commencement of the succeeding unit is a brief interval of time. Before transmitting the first program unit and, subsequently, in each one of said intervals, said distribution station transmits a SPAM message that contains execution and meter-monitor segments. Each message contains the same execution segment information that is addressed to ITS computers, 73, and instructs each computer, 73, to identify the information in the meter-monitor segment of said message, to compare said "code" information to the preprogrammed schedule information of said computer, 73, and if a match results, to select and record the programming of the program unit that follows said message, or if no match results, to not select and not record said programming. Each message contains meter-monitor "program unit identification code" information of the program unit that immediately follows. |

| 1987 Spec Reference                    | 1987 Language | 1987 Spec Reference | 1987 Language |
|--|---------------|---------------------|---------------|
| <b>Specification Correlation Chart</b> |               |                     |               |

|                       |  |                       |   |
|-----------------------|--|-----------------------|---|
| Column 4 lines 14-17. | The embedded signals may run and repeat continuously throughout the programming or they may run only occasionally or only once.  | Page 14 lines 3-5.    | In programming transmissions, given signals may run and repeat, for periods of time, continuously or at regular intervals. Or they may run only occasionally or only once.  |
| Column 4 lines 17-18. | They may appear in various and varying locations.  | Page 14 line 6.       | They may appear in various and varying locations.   |
| Column 4 lines 18-22. | In television they may appear on one line in the video portion of the transmission, or on a portion of one line, or on more than one line, and will probably lie outside the range of the television picture displayed on a normally tuned television set. | Page 14 lines 6-11.   | In television they may appear on one line in the video portion of the transmission such as line 20 of the vertical interval, or on a portion of one line, or on more than one line, and they will probably lie outside the range of the television picture displayed on a normally tuned television set.  |
| Column 4 lines 22-25. | In television and radio they may appear in a portion of the audio range that is not normally rendered in a form audible to the human ear.  | Page 14 lines 11-14.  | In television and radio they may appear in a portion of the audio range that is not normally rendered in a form audible to the human ear.   |
| Column 4 lines 25-26. | In television audio, they are likely to lie between eight and fifteen kilohertz.   | Page 14 lines 14-15.  | In television audio, they are likely to lie between eight and fifteen kilohertz.  |
| Column 4 lines 26-28. | Signals may also be transmitted on frequencies outside the ranges of television and radio.   | Page 14 lines 15-17.  | In broadcast print and data communications transmissions, the signals may accompany conventional print or data programming....  |
|                       |  | Page 463 lines 10-29. | (To minimize the risk that program instruction sets may become separated from their associated television programming, said sets are normally embedded in their associated television transmissions. But it is not an absolute requirement of the preferred embodiment that all program instruction sets be so embedded. If the volume of program instruction set information that a given programming transmission must transmit exceeds the transmission capacity of said transmission [eg., if the audience includes viewers who do not have overlay capacity and would see "snow" were set information transmitted in portions of the transmission obscured by overlays], at the proper time transmission stations can transmit said set information outside the conventional transmission [a program originating studio may transmit said set information, for example, in a satellite side lobe of the transponder transmission, transmitting the conventional transmission, and a cable head end intermediate transmission station transmits it in a separate television channel or in a transmission in a multiplexed FM frequency spectrum transmission].) |
| Column 4 lines 28-30. | Different and differing numbers of signals may be sent in different and differing word lengths and locations.  | Page 533 lines 9-17.  | In the preferred embodiment... SPAM messages are composed of varying numbers and sequences of segments of highest priority, intermediate priority, and lowest priority segment information. Complex SPAM receiver apparatus   |

**Specification Correlation Chart**

|                       |  |   |
|-----------------------|--|---|
|                       |  | have means and are preprogrammed to process at register memory execution segment information of varying lengths of binary information.  |
| Column 4 lines 31-33. | The present invention provides a method for obscuring the meaning of the signals to prevent unauthorized use of the signals and of their associated programming.<br>Their meanings may be obscured through encryption so that apparatus described below are necessary to decrypt them.                 | It is a further purpose of this invention to provide a variety of means and methods for restricting the use of transmitted communications to <u>only</u> duly authorized subscribers.<br>Such means and methods include techniques for encrypting programming and/or instructions and decrypting them at subscriber stations.   |
| Column 4 lines 34-36. | In addition, the pattern of the composition, timing, and location of the signals may vary in such ways that only receiving apparatus that are preinformed regarding the patterns that obtain at any given time will be able to process the signals correctly.  | They also include techniques whereby the pattern of the composition, timing, and location of embedded signals may vary in such fashions that only receiving apparatus that are preinformed regarding the patterns that obtain at any given time will be able to process the signals correctly.  |
| Column 4 lines 36-40. | Both the arrangement of signal units in signal words and the locations, timings, and lengths of signal words in individual transmissions or groups of transmissions may vary in fashions that can only be interpreted accurately by apparatus that are preprogrammed with the keys to such variations. | ... [signals] will probably lie outside the range of the television picture displayed on a normally tuned television set. In television and radio they may appear in a portion of the audio range that is not normally rendered in a form audible to the human ear. In television audio, they are likely to lie between eight and fifteen kilohertz. In broadcast print and data communications transmissions, the signals may accompany conventional print or data programming in the conventional transmission stream but will include instructions that receiver station apparatus are preprogrammed to process that instruct receiver apparatus to separate the signals from the conventional programming and process them differently. In all cases, signals may convey information in discrete words, transmitted at separate times or in separate locations, that receiver apparatus must assemble in order to receive one complete instruction. |
| Column 4 lines 40-46. |  | SPAM messages are composed of elements—headers, execution segments, meter-monitor segments, and information segments—whose bit lengths vary. SPAM apparatus determine the bit length of said elements in different fashions, and the particular fashion that applies to any given element relates to the priority of said element for subscriber station speed of processing. First priority segment information has the highest priority for speedy processing and is of fixed binary bit length. A SPAM header is one example of a first priority segment. An execution segment is another example. Intermediate priority segment information   |

Page 60 line 19 to page 61 line 1.

**Specification Correlation Chart**

|                       |  |                       |  |
|-----------------------|--|-----------------------|--|
|                       |  |                       | has lower priority, varies in bit length, but contains internal length information. A Meter-monitor segment is one example of an intermediate priority segment. Lowest priority segment information has the lowest priority, varies in length, and contains no internal information for determining segment length. Each information segment is an example of a lowest priority segment.                               |
|                       |  | Page 91 lines 18-20.  | All subscriber station apparatus are fully preprogrammed to perform automatically each step of each example. No manual step is required at any station.  |
| Column 4 lines 47-49. | The present invention also provides a method for identifying attempts to make unauthorized use of signals and the programming associated with signals. | Page 293 lines 32-35. | At each station where a match fails to occur--which suggests that the preprogrammed SPAM operating information of said station has been tampered with in an unauthorized fashion--not resulting in a match causes...   |
| Column 4 lines 49-50. | When an apparatus finds that signal words fail to appear in places...  | Page 293 lines 28-33. | (Simultaneously other stations compare information of other selected information of bit locations that contain information of said enable-CC13 instructions with information of other local bit locations that hold preprogrammed SPAM operating information. At each station where a match fails to occur--which suggests that the preprogrammed SPAM....   |
| Column 4 line 51.     | ...and at times when and where they are expected,...   | Page 300 lines 10-12. | In due course, but still before said 8:30 PM time, said program originating studio embeds in the video portion and transmits particular SPAM check information....   |
|                       |  | Page 301 lines 4-10.  | (Simultaneously other stations compare selected information of said check sequence to selected information of said 1st-stage-enable-WSW-program instructions. At each station where a match fails to occur--which indicates that a decryptor, 224, is not decrypting its received information correctly and suggests that the preprogrammed SPAM operating information of said station may have been tampered with.... |
| Column 4 lines 51-53. | ...the apparatus may automatically contact one or more remote sites...   | Page 294 lines 10-13. | ....causes said controller, 20, to cause the auto dialer, 24, and telephone connection, 22, to establish telephone communications with a particular predetermined remote station, in the fashion described above....   |
|                       |  | Page 301 lines 18-21. | ...said portion causes controller, 20, to cause the auto dialer, 24, and telephone connection, 22, of said station to establish telephone communications with a particular predetermined   |

**Specification Correlation Chart**

|                                      |  |  |   |
|--------------------------------------|--|--|---|
| Column 4 lines 53-54.                | ...and may or may not disable the flow of programming in one or more ways.   | Page 294 lines 1-3,<br>lines 25-27.<br>Page 301 lines 11-14,<br>lines 28-30. | remote station, in the fashion described above,....<br>...controller, 20, of said station to cause all information of said local-cable-enabling-message (#7) to be erased from all memory of said station....<br>...causes said controller, 20, to erase all preprogrammable RAM and EPROM of the signal processing apparatus at said station, thereby disabling said apparatus.)<br>...resulting in a match causes the controller, 20, of said station to cause all information of said 1st-WSW-program-enabling-message (#7) to be erased from all memory of said station....<br>...the instructions of said portion cause said controller, 20, to erase all preprogrammable RAM and EPROM of the signal processing apparatus at said station,....<br>In the present invention, particular signal processing apparatus (hereinafter called the "signal processor")<br>The apparatus include one or more devices that can selectively scan transmission frequencies as directed....<br>The frequencies may convey television, radio, or other programming transmissions.<br>The input transmissions may be received by means of antennas or from hard-wire connections.<br>The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors....<br>...transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information;...<br>...decryptors that may convert the received information, in part or in whole, to other digital information according to preset methods or patterns; ...<br>...and one or more processor/monitors and/or buffer/comparators that organize and transfer the information stream. |
| Column 4 lines 55-56.                | The present invention contemplates signal processing apparatus...  | Page 15 lines 7-8.   |   |
| Column 4 lines 56-57.                | ...comprising a device or devices that can selectively scan transmission channels as directed.   | Page 15 lines 12-14.   |   |
| Column 4 lines 57-59.                | The channels may convey television, radio, or other transmission frequencies.  | Page 15 lines 16-17.   |   |
| Column 4 lines 59-60.                | The input transmissions may be received by means of antennas or from hard-wire connections.  | Page 15 lines 17-19.   |   |
| Column 4 lines 61-62.                | The scanners/switches, working in parallel or series or combinations, transfer the transmissions...  | Page 15 lines 19-21.   |   |
| Column 4 lines 62-65.                | ...to receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information;... | Page 15 lines 21-23.   |   |
| Column 4 lines 65-67.                | ...decryptors that may convert the received information, in part or in whole, to other digital information according to preset methods or patterns;... | Page 15 lines 23-26.   |   |
| Column 4 line 68 to column 5 line 2. | ...and one or more processor/monitors and/or buffer/comparators that organize and transfer the information stream.                                     | Page 15 lines 26-28.   |   |

**V. COLUMN 5**

|                     |   |                      |   |
|---------------------|---|----------------------|---|
| Column 5 lines 2-4. | The processors and buffers can have inputs from each of the | Page 15 lines 28-30. | The processors and buffers can have inputs from each of the |
|---------------------|---|----------------------|---|

| 1987 Spec. Reference  | 1987 Language   | 1987 Spec. Reference                             | 1987 Language   |
|-----------------------|---|--|---|
|                       | receiver/detector lines and evaluate information continuously.  |  | receiver/detector lines and evaluate information continuously.  |
| Column 5 lines 4-7.   | From the processors and buffers, the signals may be transferred to external equipment such as computers, videotape recorders and players, etc.  | Page 15 lines 30-32.                             | From the processors and buffers, the signals may be transferred to external equipment such as computers, videotape recorders and players, etc.  |
| Column 5 lines 7-11.  | And/or they may be transferred to one or more internal digital recorders that receive and store in memory the recorded information and have connections to one or more remote sites for further transmission of the recorded information. | Page 15 line 32 to page 16 line 1.               | And/or they may be transferred to one or more internal digital recorders that receive and store in memory the recorded information and have connections to one or more remote sites for further transmission of the recorded information. |
| Column 5 lines 11-14. | The apparatus has means for external communication and an automatic dialer and can contact remote sites and transfer stored information as required.  | Page 16 lines 1-3.                               | The apparatus has means for external communication and an automatic dialer and can contact remote sites and transfer stored information....   |
| Column 5 lines 14-16. | The apparatus has a clock for determining and recording time as required.   | Page 16 lines 4-6.                               | The apparatus has a clock for determining and recording time as required.   |
| Column 5 lines 16-20. | It has a read only memory for recording permanent operating instructions and other information and a programmable random access memory controller ("PRAM controller") that permits revision of operating patterns and instructions.       | Page 16 lines 6-10.                              | It has a read only memory for recording permanent operating instructions and other information and a programmable random access memory controller ("PRAM controller") that permits revision of operating patterns and instructions.       |
| Column 5 lines 20-22. | The PRAM controller may be connected to all internal operating units for full flexibility of operations.  | Page 16 line 10-11.                              | The PRAM controller may be connected to all internal operating units for full flexibility of operations.  |
| Column 5 lines 23-27. | Signal processing apparatus that are employed in specific situations that require fewer functions than those provided by the basic apparatus described above may omit one or more of the specific operating elements described above.     | Page 16 lines 12-15.                             | Signal processing apparatus that are employed in specific situations that require fewer functions than those provided by the signal processor described above may omit one or more of the specific operating elements described above.    |
| Column 5 line 29.     | <b>BRIEF DESCRIPTION OF THE DRAWINGS</b>  | See generally page 16 line 33 to page 19 line 1. | <b>BRIEF DESCRIPTION OF THE DRAWINGS</b>  |
| Column 5 lines 30-31. | Fig. 1 is a block diagram of one embodiment of signal processing apparatus.   | Page 17 lines 9-10.                              | Fig. 2 is a block diagram of one embodiment of a signal processor.  |
| Column 5 lines 32-33. | Fig. 2A is a block diagram of a TV signal decoder apparatus.  | Page 17 lines 11-12.                             | Fig. 2A is a block diagram of a TV signal decoder apparatus.  |
| Column 5 lines 34-35. | Fig. 2B is a block diagram of a radio signal decoder apparatus.   | Page 17 lines 13-14.                             | Fig. 2B is a block diagram of a radio signal decoder apparatus.   |
| Column 5 lines 36-37. | Fig. 2C is a block diagram of an other signal decoder apparatus.  | Page 17 lines 15-16.                             | Fig. 2C is a block diagram of an other signal decoder apparatus.  |
| Column 5 lines 38-41. | Figs. 3A 3B and 3C are a block diagram of signal processing apparatus and methods as they might be used in an intermediate transmission facility, in this case a cable system head end.   | Page 18 lines 13-15.                             | Fig. 6 is a block diagram of one example of signal processing apparatus and methods at an intermediate transmission station, in this case a cable system headend.   |

|                       |  |                      |   |
|-----------------------|--|----------------------|---|
| Column 5 lines 42-57. | <p>Fig. 4A is a block diagram of a signal processor and a programming decryptor or other interrupt means with signals input to the signal processor before programming decryption. Also included is a local input.</p> <p>Fig. 4B is a block diagram of a signal processor and a decryptor/interruptor with signals input to the signal processor in programming after programming decryption.</p> <p>Fig. 4C is a block diagram of a signal processor and a decryptor/interruptor with signals input both before and after programming decryption.</p> <p>Fig. 4D is a block diagram of a signal processor and a multiple decryptor/interrupters in series, with signals input both before and after programming decryption.</p> <p>Fig. 4E is a block diagram of a signal processor and multiple decryptor/interrupters and with signals from one channel needed for decryption of a second channel.</p> | Page 18 lines 8-9.   | Fig. 4 is a block diagram of one example of a signal processing programming reception and use regulating system.  |
| Column 5 lines 58-60. | Fig. 5 is a block diagram of signal processor apparatus monitoring various programming and viewership patterns.  | Page 18 lines 10-12. | Fig. 5 is a block diagram of one example of a signal processing apparatus and methods monitoring system installed to monitor a subscriber station.                  |
| Column 5 lines 61-64. | Fig. 6A is a block diagram of signal processor apparatus and methods used to instruct and inform external equipment governing the environment of the local receiver site.  | Page 18 lines 18-20. | Fig. 7A is a block diagram of signal processing apparatus and methods with external equipment regulating the environment of the local receiver site.                |
| Column 5 lines 65-68. | Fig. 6B is a block diagram of signal processor apparatus and methods used to co-ordinate a multi-media, multi-channel presentation and monitor such viewership.  | Page 18 lines 21-23. | Fig. 7B is a block diagram of signal processing apparatus and methods used to control a combined medium, multi-channel presentation and to monitor such viewership. |

# VI. COLUMN 6

|                       |   |                                    |   |
|-----------------------|---|------------------------------------|---|
| Column 5 lines 2-4.   | The processors and buffers can have inputs from each of the receiver/detector lines and evaluate information continuously.  | Page 15 lines 28-30.               | The processors and buffers can have inputs from each of the receiver/detector lines and evaluate information continuously.  |
| Column 5 lines 4-7.   | From the processors and buffers, the signals may be transferred to external equipment such as computers, videotape recorders and players, etc.  | Page 15 lines 30-32.               | From the processors and buffers, the signals may be transferred to external equipment such as computers, videotape recorders and players, etc.  |
| Column 5 lines 7-11.  | And/or they may be transferred to one or more internal digital recorders that receive and store in memory the recorded information and have connections to one or more remote sites for further transmission of the recorded information. | Page 15 line 32 to page 16 line 1. | And/or they may be transferred to one or more internal digital recorders that receive and store in memory the recorded information and have connections to one or more remote sites for further transmission of the recorded information. |
| Column 5 lines 11-14. | The apparatus has means for external communication and an automatic dialer and can contact remote sites and transfer  | Page 16 lines 1-3.                 | The apparatus has means for external communication and an automatic dialer and can contact remote sites and transfer  |

Specification Correlation Chart

|                       | transfer stored information as required in a predetermined fashion or fashions.  |  | stored information....   |
|-----------------------|--|--|--|
| Column 5 lines 14-16. | The apparatus has a clock for determining and recording time as required.  | Page 16 lines 4-6.                               | The apparatus has a clock for determining and recording time as required.  |
| Column 5 lines 16-20. | It has a read only memory for recording permanent operating instructions and other information and a programmable random access memory controller ("PRAM controller") that permits revision of operating patterns and instructions.  | Page 16 lines 6-10.                              | It has a read only memory for recording permanent operating instructions and other information and a programmable random access memory controller ("PRAM controller") that permits revision of operating patterns and instructions.    |
| Column 5 lines 20-22. | The PRAM controller may be connected to all internal operating units for full flexibility of operations.   | Page 16 line 10-11.                              | The PRAM controller may be connected to all internal operating units for full flexibility of operations.   |
| Column 5 lines 23-27. | Signal processing apparatus that are employed in specific situations that require fewer functions than those provided by the basic apparatus described above may omit one or more of the specific operating elements described above.  | Page 16 lines 12-15.                             | Signal processing apparatus that are employed in specific situations that require fewer functions than those provided by the signal processor described above may omit one or more of the specific operating elements described above. |
| Column 5 line 29.     | <b>BRIEF DESCRIPTION OF THE DRAWINGS</b>   | See generally page 16 line 33 to page 19 line 1. | <b>BRIEF DESCRIPTION OF THE DRAWINGS</b>   |
| Column 5 lines 30-31. | Fig. 1 is a block diagram of one embodiment of signal processing apparatus.  | Page 17 lines 9-10.                              | Fig. 2 is a block diagram of one embodiment of a signal processor.   |
| Column 5 lines 32-33. | Fig. 2A is a block diagram of a TV signal decoder apparatus.   | Page 17 lines 11-12.                             | Fig. 2A is a block diagram of a TV signal decoder apparatus.   |
| Column 5 lines 34-35. | Fig. 2B is a block diagram of a radio signal decoder apparatus.  | Page 17 lines 13-14.                             | Fig. 2B is a block diagram of a radio signal decoder apparatus.  |
| Column 5 lines 36-37. | Fig. 2C is a block diagram of an other signal decoder apparatus.   | Page 17 lines 15-16.                             | Fig. 2C is a block diagram of an other signal decoder apparatus.   |
| Column 5 lines 38-41. | Figs. 3A 3B and 3C are a block diagram of signal processing apparatus and methods as they might be used in an intermediate transmission facility, in this case a cable system head end.  | Page 18 lines 13-15.                             | Fig. 6 is a block diagram of one example of signal processing apparatus and methods at an intermediate transmission station, in this case a cable system headend.  |
| Column 5 lines 42-57. | Fig. 4A is a block diagram of a signal processor and a programming decryptor or other interrupt means with signals input to the signal processor before programming decryption. Also included is a local input.<br>Fig. 4B is a block diagram of a signal processor and a decryptor/interruptor with signals input to the signal processor in programming after programming decryption.<br>Fig. 4C is a block diagram of a signal processor and a decryptor/interruptor with signals input both before and after programming decryption.<br>Fig. 4D is a block diagram of a signal processor and a multiple decryptor/interrupters in series, with signals input | Page 18 lines 8-9.                               | Fig. 4 is a block diagram of one example of a signal processing programming reception and use regulating system.   |



| 1987 Spec. Reference            | 1987 Language | 1987 Spec. Reference | 1987 Language |
|---------------------------------|---------------|----------------------|---------------|
| Specification Correlation Chart |               |                      |               |

|                       |  |                      |   |
|-----------------------|--|----------------------|---|
|                       | both before and after programming decryption.<br>Fig. 4E is a block diagram of a signal processor and multiple decryptor/interruptors and with signals from one channel needed for decryption of a second channel. |                      |   |
| Column 5 lines 58-60. | Fig. 5 is a block diagram of signal processor apparatus monitoring various programming and viewership patterns.  | Page 18 lines 10-12. | Fig. 5 is a block diagram of one example of a signal processing apparatus and methods monitoring system installed to monitor a subscriber station.                  |
| Column 5 lines 61-64. | Fig. 6A is a block diagram of signal processor apparatus and methods used to instruct and inform external equipment governing the environment of the local receiver site.  | Page 18 lines 18-20. | Fig. 7A is a block diagram of signal processing apparatus and methods with external equipment regulating the environment of the local receiver site.                |
| Column 5 lines 65-68. | Fig. 6B is a block diagram of signal processor apparatus and methods used to co-ordinate a multi-media, multi-channel presentation and monitor such viewership.  | Page 18 lines 21-23. | Fig. 7B is a block diagram of signal processing apparatus and methods used to control a combined medium, multi-channel presentation and to monitor such viewership. |

## VII. COLUMN 7

|                       |   |                                    |   |
|-----------------------|---|------------------------------------|---|
| Column 7 lines 1-5.   | Detectors, 34, 37, and 38, line receiver, 33, and high pass filter, 36, all operate in predetermined fashions which fashions may be changed by external controller, 20 (referring to Fig. 1), to be described below.  | Page 35 lines 31-35.               | Line receiver, 33; high pass filter, 36; detectors, 34, 37, and 38, and controller, 39, all operate under control of controller, 39, and in preprogrammed fashions that may be changed by controller, 39.   |
| Column 7 lines 6-11.  | If one returns to FIG. 1, one sees that the three separate lines of information outputted from TV signal decoder, 30, are then gated to a buffer/comparator, 8, which also receives other inputs from the other separate receivers comprising similar filters, demodulators, and decoders for other channels of interest. | Page 29 line 33 to page 30 line 5. | Decoder, 30, which is shown in detail in Fig. 2A, and decoder, 40, which is shown in Fig. 2B, detect signal information embedded in the respective inputted television and radio frequencies, ... and output said signals and said modified signals to buffer/comparator, 8.  |
| Column 7 lines 12-15. | One such other path is that from mixer 2. Mixer 2 and the controlled oscillator, 6, act to select a radio frequency of interest which is inputted to a radio signal decoder, 40,...   | Page 29 lines 26-29.               | Simultaneously, mixer, 2, and the controlled oscillator, 6, act to select a radio frequency of interest which is inputted to a radio signal decoder, 40.  |
| Column 7 lines 15-18. | ...shown in FIG. 2B. The frequency passes first through standard radio receiver circuitry, 41, well known in the art, a radio decoder, 42, and a standard digital detector, 43.   | Page 36 lines 1-14.                | Fig. 2B shows a radio signal decoder that detects and processes signal information embedded in an inputted radio frequency. Decoder, 40, in Fig. 2 is one such radio signal decoder. A selected frequency of interest is inputted at a fixed frequency to standard radio receiver circuitry, 41, which receives the radio information of said frequency using standard radio receiver techniques, well known in the art, and transfers said radio information to radio decoder, 42. Radio |

| 1987 Spec. Reference                   | 1987 Language   | 1987 Spec. Reference               | 1987 Language   |
|--|---|------------------------------------|---|
| <b>Specification Correlation Chart</b> |   |                                    |   |
|  |   |                                    | decoder, 42, decodes the signal information embedded in said radio information and transfers said decoded information to a standard digital detector, 43. Said detector, 43, detects the binary signal information in said decoded information and inputs said signal information to controller, 44, discussed more fully below.  |
| Column 7 lines 18-20.                  | All operate in predetermined fashions that may be changed by external controller, 20 (referring to Fig. 1).   | Page 36 lines 14-17.               | Circuitry, 41; decoder, 42; and detector, 43, all operate under control of controller, 44, and in predetermined fashions that may be changed by controller, 44.   |
| Column 7 lines 20-21.                  | As FIG. 1 shows, the radio signal detector outputs to buffer/comparator 8.  | Page 33 lines 18-21.               | Controller, 20, has capacity for controlling the operation of all elements of the signal processor and can receive operating information from said elements.  |
| Column 7 lines 22-24.                  | (The signal processor apparatus described here is configured to receive broadcast TV transmissions and cablecast TV and radio transmissions.  | Page 29 line 32 to page 30 line 5. | Decoder, 30, which is shown in detail in Fig. 2A, and decoder, 40, which is shown in Fig. 2B, detect signal information embedded in the respective inputted television and radio frequencies, ... and output said signals and said modified signals to buffer/comparator, 8.  |
| Column 7 lines 24-30.                  | Were it desirable to process signals in other transmissions such as broadcast microwave transmissions or cablecast transmissions on other than standard TV and radio frequencies, the mixers and switches would be appropriately reconfigured and one or more other signal decoders as described in FIG. 2C would be added. | Page 29 lines 4-7.                 | Fig. 2 shows one embodiment of a signal processor. Said processor, 26, is configured for simultaneous use with a cablecast input that conveys both television and radio programming and a broadcast television input.   |
|  |   | Page 33 lines 26-33.               | ... a signal processor can monitor any combination of inputs and transmission frequencies, and the signal processor of Fig. 2 is but one embodiment of a signal processor. Other embodiments can receive and monitor available programming in transmission frequencies other than radio and television frequencies through the addition of one or more other signal decoders such as that of Fig. 2C described below.   |
| Column 7 lines 30-34.                  | As FIG. 2C shows, the desired frequencies would pass through appropriate other receiver circuitry, 45, well known in the art, and an appropriate digital detector, 46, before being outputted to buffer/comparator 8.   | Page 36 lines 18-29.               | Fig. 2C shows a signal decoder that detects and processes signal information embedded in a frequency other than a television or radio frequency. A selected other frequency (such as a microwave frequency) is inputted to appropriate other receiver circuitry, 45, well known in the art. Said receiver circuitry, 45, receives the information of said frequency using standard receiver techniques, well known in the art, and transfers said information to an appropriate digital detector, 46. Said detector, 46, detects the binary signal information in said information and inputs said signal information to controller, 47, considered more fully below. |
| Column 7 lines 34-35.                  | These, too, can be controlled by controller, 20 (ref. to Fig. 1).)  | Page 36 lines 29-31.               | Circuitry, 45, and detector, 46, operate under control of   |

**Specification Correlation Chart**

| 1981 Spec Reference   |   |  | 1987 Spec Reference  | 1987 Language  |
|-----------------------|---|--|--|--|
|                       |   |  | Page 33 lines 18-21.   | controller, 47, and in predetermined fashions that may be changed by controller, 47.   |
| Column 7 lines 36-37. | Buffer/comparator, 8, organizes the data stream that it receives according to a pre-determined fashion... |  | Page 30 lines 7-9.<br><br>Page 36 line 32 to page 37 line 3.                         | Controller, 20, has capacity for controlling the operation of all elements of the signal processor and can receive operating information from said elements.<br><br>Buffer/comparator, 8, receives said signals from said decoders and other signals from other inputs and organizes the received information in a predetermined fashion.<br><br>Each decoder is controlled by a controller, 39, 44, or 47, that has buffer, microprocessor, ROM, and RAM capacities. Said buffer capacity of controller, 39, 44, or 47, includes capacity for ... organizing, ... inputs ....   |
| Column 7 lines 37-39. | ...that enables buffer/comparator, 8, among other things, to assemble signal units from signal words.     |  | Page 37 lines 22 to page 38 line 10.<br><br>Page 156 line 33.<br>Page 157 lines 5-7. | Controller, 39, 44, or 47, is preprogrammed to receive units of signal information, to assemble said units into signal words that subscriber station apparatus can receive and process, and to transfer said words to said apparatus. In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed to process said information automatically.<br>Controller, 39, is preprogrammed to discard received duplicate, incomplete, or irrelevant information; to correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; to modify selectively particular corrected and converted information in a predetermined fashion or fashions; to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. Said controller, 39, 44, or 47, has one or more output ports for communicating signal information to said apparatus.<br><br>Fig. 3A shows one such preferred controller, 39.<br><br>Buffer, 39C, and processor, 39D, are the second buffer and |

**Specification Correlation Chart**

| processor and perform protocol conversion functions. |   |                                    |  |  |
|--|---|------------------------------------|--|--|
|  |   |                                    |  | In all cases, signals may convey information in discrete words, transmitted at separate times or in separate locations, that receiver apparatus must assemble in order to receive one complete instruction.  |
| Column 7 lines 39-43.                                | In a pre-determined fashion, buffer/comparator, 8, identifies signal words and/or signal units that must be decrypted, either in whole or in part, and passes identified signal words and/or units to decrypter, 10.                                      | Page 30 lines 21-26.               |  | In a fashion described more fully below, buffer/comparator, 8, and a controller, 20, which, too, is described more fully below, determine whether signal processor, 26, is enabled to decrypt said information. If signal processor, 26, is so enabled, buffer/comparator, 8, transfers said information to decrypter, 10. |
| Column 7 lines 43-46.                                | Decrypter, 10, uses conventional decrypter techniques, well known in the art, in a pre-determined fashion to decrypt such signals as required.  | Page 30 lines 31-35.               |  | Decrypter, 10, is a standard digital information decrypter, well known in the art, that ... uses conventional decrypter techniques, well known in the art, to decrypt said signals as required.  |
| Column 7 lines 46-47.                                | Decrypter, 10, then passes the decrypted signals to processor or monitor, 12.   | Page 30 line 35 to page 31 line 1. |  | Decrypter, 10, transfers decrypted signals to controller, 12.  |
| Column 7 lines 47-49.                                | Buffer/comparator, 8, passes signal words and units not identified as requiring decryption directly to processor or monitor, 12.  | Page 30 lines 29-30.               |  | Buffer/comparator, 8, transfers signals that do not require decryption directly to processor or controller, 12.  |
| Column 7 lines 50-54.                                | Processor or monitor, 12, analyzes, in a pre-determined fashion, the signal words and units that it receives and determines whether they are to be passed to external equipment or to buffer/comparator, 14, for further processing or both.              | Page 31 lines 10-14.               |  | Controller, 12, receives the signals inputted from buffer/comparator, 8, and decrypter, 10; analyzes said signals in a predetermined fashion; and determines whether they are to be transferred to external equipment or to buffer/comparator, 14, or both.  |
| Column 7 lines 54-58.                                | If a signal or signals are to be passed externally, processor unit, 12, identifies, in a pre-determined fashion, the external equipment to which the signal or signals are addressed and passes them to appropriate jack ports for external transmission. | Page 31 lines 14-18.               |  | If a signal or signals are to be transferred externally, in a predetermined fashion controller, 12, identifies the external apparatus to which the signal or signals are addressed and transfers them to the appropriate port or ports for external transmission.  |
| Column 7 lines 59-60.                                | If they are to be processed further, processor or monitor, 12, passes them to buffer/comparator, 14.  | Page 31 lines 18-22.               |  | If they contain meter and/or monitor information and are to be processed further, controller, 12, selects, assembles, and transfers the appropriate information to buffer/comparator, 14.  |
| Column 7 lines 60-64.                                | Processor or monitor, 12, communicates with clock, 18, and has means to delay the transfer of signals, in a predetermined fashion, when delayed transfer is determined, in a predetermined fashion, to be required.                                       | Page 31 lines 26-29.               |  | Controller, 12, receives time information from clock, 18, and has means to delay in a predetermined fashion the transfer of signals when, in a predetermined fashion, delayed transfer is determined to be required.   |
| Column 7 lines 65-67.                                | Buffer/comparator, 14, has means for identifying, according to a predetermined fashion, which signals are to be recorded.   | Page 31 line 30 to page 32 line 6. |  | Buffer/comparator, 14, receives signal information that is meter information and/or monitor information ... organizes said received information into meter records and/or monitor  |

| 1981 Language       | 1987 Language                   | 1987 Spec Reference | 1987 Language |
|---------------------|---------------------------------|---------------------|---------------|
| 1981 Spec Reference | Specification Correlation Chart |                     |               |

|                                      |   |                     |   |
|--------------------------------------|---|---------------------|---|
|                                      |   |                     | records (called, in aggregate, hereinafter, "signal records") ... and transmits said signal records to a digital recorder, 16, and/or to one or more remote sites. ... has capacity to determine, in a predetermined fashion or fashions, what received information should be recorded, ... |
| Column 7 line 67 to column 8 line 1. | To avoid overloading digital recorder, 16, with duplicate data, buffer/comparator, 14, has means for counting and discarding duplicate signals. | Page 32 lines 9-12. | To avoid overloading digital recorder, 16, with duplicate data, buffer/comparator, 14, has means for counting and/or discarding duplicate instances of particular signal information....  |

### VIII. COLUMN 8

|                       |   |                                    |  |
|-----------------------|---|------------------------------------|--|
| Column 8 lines 2-4.   | Buffer/comparator, 14, is connected to clock, 18, and has means for adding information such as time of receipt, for example, to signals.  | Page 32 lines 14-16.               | Buffer/comparator, 14, receives time information from clock, 18, and has means for incorporating time information into signal records.   |
| Column 8 lines 4-7.   | Upon determining in a predetermined fashion that a signal word or unit should be passed, buffer/comparator, 14, transmits the combined information to a digital recorder, 16.   | Page 31 line 30 to page 32 line 1. | Buffer/comparator, 14, receives signal information that is meter information and/or monitor information from controller, 12, and from other inputs; organizes said received information into meter records and/or monitor records (called, in aggregate, hereinafter, "signal records") in a predetermined fashion or fashions; and transmits said signal records to a digital recorder, 16, ... |
| Column 8 lines 7-12.  | Buffer/ comparator, 14, also has means for determining, in a predetermined fashion, when signals require transfer immediately to a remote site and for communicating such a requirement to controller, 20, and such signals directly with the remote site via telephone connection, 22.                           | Page 32 lines 16-20.               | Buffer/comparator, 14, also has means for transferring received information immediately to a remote site or sites via telephone connection, 22, and for communicating a requirement for such transfer to controller, 20, which causes such transfer.   |
| Column 8 lines 13-14. | Digital recorder, 16, may be a memory storage element of standard design.   | Page 32 lines 34-35.               | Digital recorder, 16, is a memory storage element of standard design. ...  |
| Column 8 lines 14-16. | It has means for determining in a predetermined fashion how full it is and passing this information to controller, 20.  | Page 33 lines 2-4.                 | In a predetermined fashion, recorder, 16, can determine how full it is and transmit this information to controller, 20.  |
| Column 8 lines 16-19. | The predetermined fashion may include provisions whereby recorder, 16, informs controller, 20, automatically when it reaches a certain level of fullness.   | Page 33 lines 4-6.                 | Recorder, 16, may inform controller, 20, automatically when it reaches a certain level of fullness.  |
| Column 8 lines 20-25. | The signal processor apparatus also has a controller device which includes programmable random access memory controller 20, read only memory 21 that may contain a unique digital code capable of identifying the signal processing apparatus uniquely; an automatic dialing device 24, and a telephone unit, 22. | Page 33 lines 7-12.                | Signal processor, 26, has a controller device which includes programmable RAM controller, 20; ROM, 21, that may contain unique digital code information capable of identifying signal processor, 26, and the subscriber station of said processor, 26, uniquely; an automatic dialing device 24; and a telephone unit, 22.   |
| Column 8 lines 25-27. | The controller, 20, governs the operation of all operating  | Page 33 lines 18-20.               | Controller, 20, has capacity for controlling the operation of  |

| 1987 Language         | 1987 Spec. Reference   | all elements of the signal processor ...  |
|-----------------------|--|---|
| Column 8 lines 27-29. | Page 248 line 35 to page 249 line 5.                                       | In a predetermined fashion, controller, 20, controls oscillator, 6, to sequence local oscillator, 6, in the pattern: cable channel 2, cable channel 4, cable channel 7, cable channel 13, wireless channel 5, wireless channel 9, wireless channel 13, then to repeat said pattern.   |
| Column 8 lines 30-32. | Page 248 line 35 to page 249 line 5.<br><br>Page 253 lines 22-35.          | In a predetermined fashion, controller, 20, controls oscillator, 6, to sequence local oscillator, 6, in the pattern: cable channel 2, cable channel 4, cable channel 7, cable channel 13, wireless channel 5, wireless channel 9, wireless channel 13, then to repeat said pattern.<br><br>Automatically oscillator, 6, causes switch, 1, to shift its contact lever from the first alternate contact to the second alternate contact to which wireless transmissions are inputted and causes mixer, 3, to select the frequency of channel 5 and input said frequency of interest, at a fixed frequency, to decoder, 30. Controller, 20, then transmits a particular preprogrammed wireless-5 instruction to said control processor, 39J, that informs said processor, 39J, wireless channel 5 is inputted to decoder, 30.<br>Receiving said wireless-5 instruction causes control processor, 39J, to cause all apparatus of decoder, 30, to commence receiving, detecting, and processing SPAM message information embedded in the inputted frequency of interest.<br><br>Automatically oscillator, 6, causes mixer, 2, to select said frequency and input it, at a fixed frequency, to decoder, 40. Controller, 20, then transmits a particular preprogrammed radio-99.0 instruction to control processor, 44J, that informs said processor, 44J, 99.0 MHz is inputted to decoder, 40.<br>Receiving said radio-99.0 instruction causes control processor, 44J, to cause all apparatus of decoder, 40, to commence receiving, detecting, and processing SPAM message information embedded in the inputted frequency of interest. |
| Column 8 lines 32-35. | Page 33 lines 18-20.<br><br>For example, page 290 line 11 to page 291 line | Controller, 20, has capacity for controlling the operation of all elements of the signal processor ...<br><br>... executing said instructions causes controller, 20, causes prepare to receive a particular enabling SPAM   |

|  |  |    |   |
|--|--|----|---|
|  |  | 4. | <p>message at a particular time. Automatically, controller, 20, checks the time of the clock, 18, of signal processor, 200, periodically. At a particular commence-enabling time that is a predetermined interval prior to the aforementioned 8:30 PM time (when said originating studio commences transmitting the "Wall Street Week" program), controller, 20, causes all apparatus of the TV signal decoder, 30, to delete from memory all information of received SPAM information; transmits particular preprogrammed enable-next-program-on-CC13 information to the control processor, 39J, of said decoder, 30, and causes said control processor, 39J, to place one instance of said information at a particular controlled-function-invoking information location; causes the oscillator, 6, then to cause switch, 1, and mixer, 3, to select information of a particular master cable control channel (that may or may not be cable channel 13) from the multi-channel cable system transmission inputted to signal processor, 200, and to input said selected to TV signal decoder, 30; causes said control processor, 39J, to cause digital detectors, 34, 37, and 38, to cease inputting detected information to controller, 39, and commence discarding said information (which said detectors, 34, 37, and 38, have capacity to do) and to cause particular apparatus of decoder, 30,--for example, line receiver, 33, and digital detector, 34--to commence receiving and inputting to controller, 39, SPAM information detected in the frequency inputted to decoder, 30; ...</p> <p>They also include techniques whereby the pattern of the composition, timing, and location of embedded signals may vary in such fashions that only receiving apparatus that are preinformed regarding the patterns that obtain at any given time will be able to process the signals correctly.</p> <p>Controller, 20, has capacity for controlling the operation of all elements of the signal processor ...</p> <p>Controller, 39, is preprogrammed to discard received duplicate, incomplete, or irrelevant information; to correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital</p> |
|  |  |    | <p>Page 13 lines 19-24.</p> <p>Page 33 lines 18-20.</p> <p>Page 37 line 31 to page 38 line 3.</p> <p>[Controller, 20 can instruct buffer/ comparator, 8,] how to assemble signal words into signal units and join units together for further transfer and...</p> <p>Column 8 lines 35-37.</p>   |

| 1981 Language                   | 1987 Spec. Reference | 1987 Spec. Reference | 1987 Language |
|---------------------------------|----------------------|----------------------|---------------|
| Specification Correlation Chart |                      |                      |               |

|                       |  |   |   |
|-----------------------|--|---|---|
|                       |  |   | information that subscriber station apparatus can receive and process; ...  |
| Column 8 lines 38-39. | ...[Controller, 20 can instruct buffer/comparator 8] how to determine which signals to pass to decrypter, 10.  | Page 39 lines 16-21.  | Controller, 20, has capacity to preprogram (or reprogram) all said decoder apparatus, 27, 28, 29, 30, and 40, and thereby controls the fashions of detecting, correcting, converting, modifying, identifying, transferring, and other functioning of said decoders.<br>Controller, 20, has capacity for controlling the operation of all elements of the signal processor ...<br>Then said decrypt-with-J instructions cause controller, 20, to activate the output capacity of buffer/comparator, 8, that outputs to decryptor, 10; ...<br>Controller, 20, is preprogrammed with ... Using preprogrammed information and instructions as required, said decrypt-a-00-header-message instructions transfer the received binary information of said second message from buffer/comparator, 8, to decryptor, 10, in the same fashion that the aforementioned transfer-a-00-header-message instructions controlled the transfer of the information of said message from controller, 39, to buffer/comparator, 8.                             |
| Column 8 lines 39-40. | [Controller, 20] can tell decrypter, 10, when and how to change decryption patterns, fashions, and techniques. | Page 33 lines 18-20.<br>For example, page 147 lines 29-31.<br>For example, page 148 lines 4-16. | Controller, 20, has capacity for controlling the operation of all elements of the signal processor ...<br>Among said preprogrammed instructions is key information of J, and said instructions cause controller, 20, automatically to select and transfer said key information to decryptor, 10.<br>Decryptor, 10, receives said key information and automatically commences using it as its key for decryption.<br>Decryptor, 10, commences ... decrypting ... Said decrypt-a-00-header-message instructions cause controller, 20, to cause decryptor, 10, to transfer the first H bits without decrypting or altering said bits in any fashion, to decrypt and transfer the next X bits, to transfer the next L bits without decrypting or altering said bits, to decrypt and transfer the next MMS-L bits, and finally, to transfer any bits remaining after the last of said MMS-L bits without decrypting or altering said bits. In this fashion, the cadence information in said message, which is not encrypted, is transferred by |



**Specification Correlation Chart**

|                       |   |  |  |
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| Column 8 lines 40-44. | [Controller, 20] can tell processor or monitor, 12, how to determine which signals to pass externally and when and where and how to determine which signals to pass to buffer/comparator, 14. | <p>Page 33 lines 18-20.</p> <p>Page 149 lines 8-15.</p> <p>For example, page 150 lines 29-35.</p> <p>For example, page 152 line 19 to page 153 line 1.</p> | <p>decryptor, 10, to controller, 12, without alteration.</p> <p>Controller, 20, has capacity for controlling the operation of all elements of the signal processor and ...</p> <p>Then said ... instructions cause controller, 20, to transmit to controller, 12, a particular transfer-decrypted-message instruction and particular decryption mark information of key J that identifies J as the decryption key.</p> <p>Receiving said instruction and information causes controller, 12, to execute particular preprogrammed transfer- and-meter instructions ...</p> <p>Automatically, controller, 12, executes preprogrammed transfer-to-205-@12 instructions; activates the output port that outputs to SPAM- controller, 205C; then commences transferring information of said decrypted information of the second message under control of said transfer-and-meter instructions commencing with the first of said H bits and transferring information, ...</p> <p>... causes controller, 12, to cease transferring information, under control of said transfer-and-meter instructions, to deactivate all output ports, and to commence executing the meter instructions of said transfer-and-meter instructions.</p> <p>Said meter instructions cause controller, 12, ... to transfer to buffer/comparator, 14, particular header identification information that identifies controller, 12, as the source of said transfer the information recorded at said SPAM-meter memory then the information recorded at said decryption-mark- @12 register memory, which information is the decryption mark of key J. (Hereinafter, said meter information generated by the second combining synch command in example #2 is called the "2nd meter information (#2).")</p> <p>Buffer/comparator, 14, operates under control of controller, 20, ...</p> <p>... buffer/comparator, 14, has means for counting and/or discarding duplicate instances of particular signal information and for incorporating count information into signal records.</p> |
| Column 8 lines 44-46. | [Controller, 20] can tell buffer/comparator, 14, what and how to count, what and how to mark signals, and what received signals to discard.   | <p>Page 32 lines 20-21.</p> <p>Page 32 lines 10-13.</p>  | <p>Buffer/comparator, 14, operates under control of controller, 20, ...</p> <p>... buffer/comparator, 14, has means for counting and/or discarding duplicate instances of particular signal information and for incorporating count information into signal records.</p>   |

| 1981 Spec Reference                    | 1981 Language | 1987 Spec Reference | 1987 Language |
|--|---------------|---------------------|---------------|
| <b>Specification Correlation Chart</b> |               |                     |               |

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|                       |  | For example, page 223 lines 22-33.   | Said match causes controller, 20, to execute said instructions. Under control of said first set, controller, 20, initiates assembly of said first meter record by selecting and placing at particular record locations at buffer/comparator, 14, particular record format information, then program unit information from a particular meter-monitor field of said 1st meter & monitor information (#4), origin of transmission information from a second field, date and time of transmission information from a third field, decryption key information from the decryption mark of said 1st meter & monitor information (#4), and finally date and time of processing information from clock, 18. |
|                       |  | For example, page 224 lines 12-16.   | When said second set is completed, controller, 20, executes said third specified set which causes controller, 20, to cause buffer/comparator, 14, to transfer said second meter record to recorder, 16, in a predetermined fashion then discard all information of said record from its memory and to ...  |
| Column 8 lines 46-50. | The controller, 20, also inputs the digital recorder, 16, to direct it to output the information from the memory of the recorder, 16, to telephone connection, 22, and thence to the collection site at the remote geographical location.        | Page 33 lines 18-20.<br><br>Page 273 lines 4-6.<br><br>Page 273 lines 21-25. | Controller, 20, has capacity for controlling the operation of all elements of the signal processor ...<br><br>The first stage of said sequence involves transferring audit information to a particular first host computer at a first remote station.<br><br>... causes controller, 20, to cause recorder, 16, to transmit all recorded meter audit records and particular other audit information to telephone connection, 22, which causes said connection, 22, to transmit said records and information to said first computer.   |
| Column 8 lines 50-55. | The controller, 20, also controls the automatic telephone dialing device, 24, to allow the apparatus to automatically output its own information in accordance with a predetermined sequence and to change telephone numbers dialed as required. | Page 273 lines 6-8.<br><br>Page 274 lines 11-13.                             | Controller, 20, transfers the telephone number, 1-800-AUDITOR, to auto dialer, 24, and causes said dialer, 24, to dial said number.<br><br>Controller, 20, transfers the telephone number, 1-800-CHARGES, to auto dialer, 24, and causes the dialing of said number.   |
| Column 8 lines 56-58. | To facilitate the operation of the device, the controller, 20, can receive information from all operating elements of the apparatus.   | Page 33 lines 18-21.   | Controller, 20, has capacity for ... all elements of the signal processor and can receive operating information from said elements.  |
| Column 8 lines 58-60. | Control signals can be passed to the apparatus by means of the programming transmissions input at switch, 1, and mixer, 2.   | Page 290 lines 26-31.  | ... causes the oscillator, 6, then to cause switch, 1, and mixer, 3, to select information of a particular master cable  |

**Specification Correlation Chart**

|                       |   |                                    |  |
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|                       |   |                                    | control channel (that may or may not be cable channel 13) from the multi-channel cable system transmission inputted to signal processor, 200, and to input said selected to TV signal decoder, 30; ...<br><br>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at decoder, 30, (to which said master control channel is inputted), to detect the information of said message, ...<br><br>A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations.<br><br>... causes said controller, 20, again to cause said switch, 1, and said mixer, 3, to input the transmission of said master channel to said decoder, 30, and to cause said decoder, 30, to commence processing to detect a SPAM end of file signal. |
|                       |   | Page 291 lines 21-24.              | Said message is detected at said decoder, 30, and inputted to the controller, 39, of said decoder, 30.<br>Receiving said message causes said controller, 39, to transmit said Read-Meters-of-Selected-Stations SPAM message to the controller, 20, of the signal processor, 200, of said station.  |
|                       |   | Page 59 lines 29-31.               | Executing said ones causes controller, 20, to transmit the current reading information of utilities meter, 262, to a remote metering station computer and cause said computer to process said information. Automatically, controller, 20, ... activates telephone connection, 22; inputs a particular telephone number ...   |
| Column 8 lines 60-62. | An example of such a control signal is an instruction for the apparatus to contact a remote telephone unit.   | Page 402 lines 22-26.              | A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations.  |
|                       |   | Page 403 lines 7-12.               | Said contained messages that are addressed to apparatus such as decoder, 30, PRAM controller, 20, and switch controller, 20A, that exist within the equipment case of a signal processor, 200, are inputted to said apparatus from controller, 12, via controller, 20, rather than via matrix switch, 259 ...<br>(In circumstances where information collecting and processing functions are extensive—for example, when a   |
|                       |   | Page 405 lines 20-29.              |  |
| Column 8 lines 62-65. | The processor unit, 12, has the capacity to identify instruction signals for controller, 20, and pass them to controller, 20, over control information lines. | Page 59 lines 29-31.               |  |
|                       |   | For example, page 531 lines 17-22. |  |
| Column 8 lines 65-68. | Buffer/comparator, 14, has the capacity to pass received time signals to the controller, 20, in a predetermined fashion set by                                | Page 32 lines 24-32.               |  |

| 1981 Spec Reference             | 1981 Language | 1987 Spec Reference | 1987 Language |
|---------------------------------|---------------|---------------------|---------------|
| Specification Correlation Chart |               |                     |               |

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|                                      | and changeable by controller, 20.  |  | <p>given buffer/comparator, 14, must collect monitor information at a subscriber station with apparatus and/or communications flows that are extensive and complex—buffer/comparator, 14, may operate under control of a dedicated, so-called "on-board" controller, 14A, at buffer/comparator, 14, which is preprogrammed with appropriate control instructions and is controlled by controller, 20, ...</p> <p>Automatically, under control of said process-monitor-info instructions, onboard controller, transmits to controller, 20, a particular preprogrammed instruct-to-record instruction that causes controller, 20, to cause onboard controller, 14A, to transmit the monitor record of said prior programming to recorder, 16, in a predetermined fashion and that causes controller, 20, to cause recorder, 16, to record said monitor record information in a predetermined fashion.</p> <p>... is described more fully below. Controller, 20, has capacity for controlling the operation of all elements of the signal processor and can receive operating information from said elements. Controller, 20, has capacity to turn off any ...</p> <p>... program instructions, to cause the control processor, 391, of decoder, 30, to transfer to controller, 20, selected information of said check sequence of binary information and compare said selected information to selected information of said 1st-stage-enable-WSW-program instructions ...</p> <p>At each station where a match fails to occur—which indicates that a decryptor, 224, is not decrypting its received information correctly and suggests that the preprogrammed SPAM operating information of said station may have been tampered with—not resulting in a match causes the controller, 20, ...</p> |
| Column 8 line 68 to column 9 line 4. | Buffer/comparator, 8, and monitor or processor, 12, each have the capacity to inform controller, 20, when signals that they are instructed to look for in predetermined fashions, set by and changeable by controller, 20, fail to appear. | <p>For example, page 179 lines 24-32.</p> <p>Page 33 lines 18-21.</p> <p>For example, page 300 line 32 to page 301 line 1.</p> <p>with respect to Page 301 lines 6-11.</p> |   |

IX. COLUMN 9

|                     |  |                       |  |
|---------------------|--|-----------------------|--|
| Column 9 lines 4-8. | Oscillator, 6, the controller, 20, and buffer/comparator, 8, can interact in such a fashion that buffer, 8, can identify the channel that any given signal is received on and mark the | Page 258 lines 17-25. | ... said wireless channel 9 and causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13. |
|---------------------|--|-----------------------|--|

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|                       | signal for subsequent identification of the channel.   |                      | Automatically, oscillator, 6, causes mixer, 3, to select the frequency of channel 13 and input said frequency to decoder.<br>30. Controller, 20, then transmits a particular preprogrammed wireless-13 instruction to said control processor, 39J, that informs said processor, 39J, wireless channel 13 is inputted to decoder, 30.<br><br>... commence transferring information from control processor, 39J, to buffer/comparator, 8, then to transmit a message that consists of binary information of a "00" header then the execution segment information of the pseudo command then a meter-monitor segment containing said monitor information in RAM (including the associated channel mark and the format information of said information) then any padding bits required to end said message. (Hereinafter, said message is called the "3rd-old-program-message (#5)".) ...<br><br>Receiving any given old programming message causes onboard controller, 14A, to ... determine that the channel mark ... in said old programming message matches the channel mark ... of a selected monitor information record previously initiated ... |
| Column 9 lines 8-10.  | Digital recorder, 16, can tell the controller, 20, when it reaches predetermined levels of fullness...   | Page 260 lines 5-13. | Recorder, 16, may inform controller, 20, automatically when it reaches a certain level of fullness.  |
| Column 9 lines 10-12. | to permit the controller, 20, to instruct auto dialer, 24, to contact an appropriate remote site allowing the recorder, 16, to output its data | Page 270 lines 5-12. | In each example, ... recorder, 16, measures the quantity of its recording capacity that holds signal records, in a predetermined fashion, and determines that said quantity is equal to or greater than said particular fullness information. Said determining causes recorder, 16, to transfer a particular instruct-to- call instruction to controller, 20, that causes controller, 20, to activate telephone connection, 22, and proceed with a particular preprogrammed telephone signal record transfer sequence that is fully automatic.<br>The first stage of said sequence involves transferring audit information to a particular first host computer at a first remote station. Controller, 20, transfers the telephone number, 1-800-AUDITOR, to auto dialer, 24, and causes said dialer, 24, to dial said number.  |
| Column 9 lines 13-16. | ...making memory available. In normal operation, controller,   | Page 275 line 33 to  | Automatically said second computer responds with a   |

# **Specification Correlation Chart**

|                       |  |                                       |   |
|-----------------------|--|---------------------------------------|---|
|                       | 20, may be instructed by the remote site to erase recorder, 16, which instruction controller, 20, effects through communication with recorder, 16;...                  | page 276 line 2.                      | particular transmission complete signal that causes controller, 20, to terminate said telephone call then to cause recorder, 16, to erase from memory all said meter charge information.  |
| Column 9 lines 16-19. | ...however, controller may ignore such an instruction in a predetermined fashion, if the information in recorder, 16, is to be conveyed to more than one remote sites. | Page 273 line 30 to page 274 line 10. | Automatically said first computer determines, in a predetermined fashion, that the audit information has been received correctly and completely, and said determining causes said first computer automatically to transmit a particular transmission complete signal to controller, 20. Receiving said complete signal causes controller, 20, to cause telephone connection, 22, to terminate said telephone call. Then controller, 20, transfers information to recorder, 16, that causes recorder, 16, to erase from memory all said record and other information that is <i>not also meter charge information or monitor information</i> . Having completed the first stage, controller, 20, then commences automatically the second stage of said sequence which involves <i>transferring meter charge information</i> to a particular second host computer at a second remote station. |
| Column 9 lines 20-21. | The controller, 20, can shut off any element or elements of the apparatus in whole or in part.   | Page 33 lines 21-23.                  | Controller, 20, has capacity to turn off any element or elements of controlled subscriber station apparatus, in whole or in part, ...   |
| Column 9 lines 21-22. | It is interactive with external sources via telephone connection, 22,...   | Page 273 lines 6-19.                  | Controller, 20, transfers the telephone number, 1-800-AUDITOR, to auto dialer, 24, and causes said dialer, 24, to dial said number. Said first computer answers said telephone call, and in a fashion well known in the art, controller, 20, and said first computer automatically establish telephone communications. Automatically, controller, 20, causes telephone connection, 22, to transfer particular identifying information that includes the unique digital identifying code of ROM, 21, to said first computer followed by a particular instruct-to-receive signal. Said instruct-to-receive signal causes said first computer automatically to prepare to receive audit records then to transfer a particular start signal via connection, 22, to controller, 20.  |
| Column 9 line 23.     | ...and can be reprogrammed from such remote sources.   | Page 537 lines 6-17.                  | At 3:10 AM, GMT, said <i>European master network station</i> transmits particular SPAM message information, embedded in the information of said master transmission, including a SPAM end of file signal and the aforementioned sequence of SPAM messages that contain  |

### Specification Correlation Chart

|  |   |   |  |
|--|---|---|--|
|  |   |   | <p>operating system instructions. In so doing, said European master network station inputs operating system instructions to all SPAM apparatus and receiver station computers, 73, and microcomputers, 205, thereby causing said apparatus and computers, 73 and 205, as described above in "PREPROGRAMMING RECEIVER STATION OPERATING SYSTEMS," to commence operating under control of the instructions of said operating systems.</p> <p>...particular information of said TELEPHON.EXE module that causes ... signal processor, 200, to transmit the information ... via telephone network in the fashion of example #10, to a computer at a particular remote data collection station.</p> <p>Over the course of a particular time such as two days, computers at remote data collection stations receive data automatically from each farmer of said nations which data indicates the specific quantity of each crop that each farmer expects to harvest during the 2027 growing season. Automatically, the received data is aggregated, in a fashion well known in the art, at the computer of said <i>European master network</i> origination and control station ...</p> <p>Then, at 3:59 PM, on Thursday, February 18, 2027, the cycle of generating and communicating information of farmers is repeated ...</p> |
| <p>with respect to page 555 line 24 to page 556 line 14.</p> |   | <p><b>Operation of Signal Processor Apparatus</b></p>   | <p><b>Operating Signal Processor Systems ... Introduction</b></p>  |
|  | <p>See generally Page 86 line 31 to page 278 line 20</p>                            | <p>The simplest forms of signal processor apparatus are each of the five paths described in Figures 2A, 2B, and 2C. Each path, by itself, is capable of identifying signals in the portions of programing transmissions that each receives.</p> | <p>Signal decoder apparatus such as decoder, 203, in Fig. 1 and decoders, 30 and 40, in Fig. 2 are basic in the unified system of this invention.</p> <p>Fig. 2A is a block diagram of a TV signal decoder apparatus.</p> <p>Fig. 2B is a block diagram of a radio signal decoder apparatus.</p> <p>Fig. 2C is a block diagram of an other signal decoder apparatus.</p> <p>... transmissions may be received by means of antennas or from hard-wire connections. The scanners/switches,</p>   |
| <p>Column 9 line 26.</p>                                     |   |   |  |
| <p>Column 9 lines 27-31.</p>                                 | <p>Page 34 lines 18-20.</p> <p>Page 17 lines 11-16.</p> <p>Page 15 lines 18-22.</p> |   |  |

**Specification Correlation Chart**

|                       |  |  | working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions ...   |
|-----------------------|--|--|--|
| Column 9 lines 31-33. | A digital signal is embedded by conventional generating and encoding means and transmitted in a television, radio or other transmission.   | Page 22 lines 1-6.   | ... a first series of control instructions is generated, embedded sequentially on said line or lines of the vertical interval, and transmitted on the first and each successive frame of said television program transmission, signal unit by signal unit and word by word, until said series has been transmitted in full.<br><br>Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio.<br><br>... processes signal information embedded in an inputted radio frequency.<br><br>... processes signal information embedded in a frequency other than a television or radio frequency.  |
| Column 9 lines 33-40. | Each path is capable of receiving a transmission or a portion of a transmission and detecting digital signals in that portion and transmitting said signals to in-line equipment for further processing. Each of the paths described in FIGS. 2A, 2B, and 2C can identify and process only signals embedded in the particular transmission channel inputted to said paths. | Figs. 2A-2C.<br>Page 35 lines 1-6.<br><br>Page 35 lines 16-18.<br><br>Page 35 lines 27-30.<br><br>Page 36 lines 1-3.<br><br>Page 36 lines 18-20. | <i>See figures.</i><br>The apparatus of these separate paths are designed to act on the particular frequency ranges in which embedded signal information may be found. The first path, designated A, detects signal information embedded in the video information portion of said television channel signal.<br><br>The second path, designated B, detects signal information embedded in the audio information portion of said television channel signal.<br><br>The third path, designated C, inputs the separately defined transmission to a digital detector, 38, which detects signal information embedded in any other information portion of said television channel signal...<br><br>Fig. 2B shows a radio signal decoder that detects and processes signal information embedded in an inputted radio frequency.<br><br>Fig. 2C shows a signal decoder that detects and processes signal information embedded in a frequency |



**Specification Correlation Chart**

other than a television or radio frequency.

|                       |  |  |   |  |  |
|-----------------------|--|--|---|--|--|
|                       |  |  |   |  | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46.<br><i>See generally.</i>  |
| Column 9 lines 41-44. | The signal processor apparatus described in FIG. 1 can identify such signals in multiple and variable locations in multiple and variable modes, channels, and transmissions.   |  | Page 37 lines 26-28.  |  | <i>See generally.</i>  |
| Column 9 lines 44-47. | Such signals may be transmitted over and over continuously in such transmissions or they may be transmitted over and over only for predetermined time intervals.   |  | Page 248 line 13 to page 271 lines 30.<br>Page 457 line 12 to page 463 line 28.<br>Page 14 lines 3-6. |  | <i>See generally.</i>  |
| Column 9 lines 47-52. | The controller, 20, is programmed to sequence the local oscillator, 6, to select each desired frequency for a specific time interval in accordance with a predetermined pattern. This pattern may be selected in accordance with standard broadcast and cablecast practices known to exist on that transmission line or frequency. |  | Page 248 line 17 to page 249 line 5.<br><br>Page 257 line 24 to page 258 line 19.                     |  | In programming transmissions, given signals may run and repeat, for periods of time, continuously or at regular intervals. Or they may run only occasionally or only once. They may appear in various and varying locations.<br>Signal processor, 200, is preprogrammed with information that identifies each cable and over-the-air (hereinafter, "wireless") transmission or frequency in the locality of the subscriber station of Fig. 3 as well as the standard broadcast and cablecast practices that apply on said transmissions and frequencies ... In a predetermined fashion, controller, 20, controls oscillator, 6, to sequence local oscillator, 6, in the pattern: cable channel 2, cable channel 4, cable channel 7, cable channel 13, wireless channel 5, wireless channel 9, wireless channel 13, then to repeat said pattern.<br><br>Said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 9. Automatically oscillator, 6, causes mixer, 3, to select the frequency of channel 9 and input said frequency of interest, at a fixed frequency, to decoder, 30 ...<br>Controller, 20, has capacity for keeping track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13. |
| Column 9 lines 53-55. | The local oscillator, being thus sequenced, will allow each signal decoder, 30 and 40, to receive a particular frequency at  |  | Page 257 line 24 to page 258 line 19.   |  | Said detection-complete information causes controller, 20, to cause oscillator, 6, to cause the selection of the next  |

**Specification Correlation Chart**

|                       |  |   |  |
|-----------------------|--|---|--|
|                       | a particular time interval.  | <p>Page 265 line 27 to<br/>Page 266 line 21.</p>                                      | <p>channel in the predetermined television channel selection pattern: wireless channel 9. Automatically oscillator, 6, causes mixer, 3, to select the frequency of channel 9 and input said frequency of interest, at a fixed frequency, to decoder, 30 ...</p> <p>Controller, 20, has capacity for keeping track of elapsed time, and after determining in a predetermined fashion that a particular predetermined period of time has elapsed from the input of wireless channel 9 to decoder, 30, controller, 20, ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13.</p> <p>Said radio-detection-complete information causes ... controller, 20, to cause oscillator, 6, to cause the selection of the next frequency in the predetermined radio frequency selection pattern: 99.0 MHz. Automatically oscillator, 6, causes mixer, 2, to select said frequency and input it, at a fixed frequency, to decoder, 40 ...</p> <p>After determining, in a predetermined fashion, that a particular predetermined period of time has elapsed from the input of said 99.0 MHz frequency to decoder, 40, controller, 20, ... causes oscillator, 6, to cause the selection of the next frequency in the predetermined radio frequency selection pattern: 100.0 MHz.</p> |
| Column 9 lines 55-57. | This will define the timing of the composite outputs of the digital detectors, 34, 37, and 38 in FIG. 2A, and 43 in FIG. 2B. | <p>Page 250 lines 13-17.</p> <p>Page 251 lines 8-11.</p> <p>Page 263 lines 19-24.</p> | <p>Example #5 begins with the embedding and transmitting, at the remote station that originates the "Wall Street Week" broadcast, of the first message of the "Wall Street Week" program which is the message of the first combining synch command.</p> <p>Receiving said embedded information causes the binary SPAM information of said first command, with error correcting information, to be detected at detector, 34; ...</p> <p>... said information to radio decoder, 42, which decodes the the embedded signal information of said command and transmits said signal information to digital detector, 43, which detects the binary information with error correcting bit information of said command and transfers said binary and bit information to controller, 44.</p>   |

| 1981 Spec/Reference             | 1981 Language | 1987 Spec/Reference | 1987 Language |
|---------------------------------|---------------|---------------------|---------------|
| Specification Correlation Chart |               |                     |               |

|                       |  |                                      |   |
|-----------------------|--|--------------------------------------|---|
| Column 9 lines 57-63. | The same controller will control buffer/comparator, 8, to discard received duplicate and partial signals, to mark signals with correct channel identifiers, to transfer signals to decrypter, 10, and processor or monitor, 12, as required, and to perform such other functions as buffer/ comparator, 8, performs. | Page 37 lines 26-28.                 | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46.  |
|                       |  | Page 146 line 31 to page 147 line 3. | Said failures to match cause the controllers, 20, of said stations automatically ... to cause said buffer/comparators, 8, to discard all received information of said second message; and to cause ... said buffer/comparators, 8, to commence processing in the conventional fashion.)   |
|                       |  | Page 258 lines 17-25.                | ... causes oscillator, 6, to cause the selection of the next channel in the predetermined television channel selection pattern: wireless channel 13. Automatically, oscillator, 6, causes mixer, 3, to select the frequency of channel 13 and input said frequency to decoder, 30. Controller, 20, then transmits a particular preprogrammed wireless-13 instruction to said control processor, 39J, that informs said processor, 39J, wireless channel 13 is inputted to decoder, 30.  |
|                       |  | Page 260 lines 5-13.                 | ... commence transferring information from control processor, 39J, to buffer/comparator, 8, then to transmit a message that consists of binary information of a "00" header then the execution segment information of the pseudo command then a meter-monitor segment containing said monitor information in RAM (including the associated channel mark and the format information of said information) then any padding bits required to end said message. (Hereinafter, said message is called the "3rd-old-program-message (#5)".) |
|                       |  | Page 147 lines 29-31.                | Then said decrypt-with-J instructions cause controller, 20, to activate the output capacity of buffer/comparator, 8, that outputs to decryptor, 10;   |
|                       |  | Page 149 lines 17-20.                | Next said decrypt-a-00-header-message instructions cause  |
|                       |  | Page 149 lines 27-29.                | controller, 20, to cause buffer/comparator, 8, to transfer to decryptor, 10, a quantity of signal words of said binary information of the second message ...  |



Specification Correlation Chart

|                                       |   |  |  |
|---------------------------------------|---|--|--|
|                                       |   |  | <p>command. Receiving the header and execution segment causes controller, 12, to determine that said message is addressed to URS microcomputers, 205, and to transfer said message accordingly.</p> <p>Receiving said complete-transfer-phase instruction causes controller, 12, to cease transferring information, under control of said <i>transfer-and-meter instructions</i>, to deactivate all output ports, and to commence executing the meter instructions of said transfer-and-meter instructions. Said meter instructions cause controller, 12, to ... transfer to buffer/comparator, 14, particular header identification information that identifies controller, 12, as the source of said transfer the information recorded at said SPAM-meter memory then the information recorded at said decryption-mark-@12 register memory, which information is the decryption mark of key J. (Hereinafter, said meter information generated by the second combining synch command in example #2 is called the "2nd meter information (#2).")</p> |
| Page 152 line 18 to page 153 line 1.  |   |  | <p>Buffer/comparator, 14, operates under control of controller, 20, ...</p> <p>Said match causes controller, 20, to execute said instructions. Under control of said first set, controller, 20, initiates assembly of said first meter record by selecting and placing at particular record locations at buffer/comparator, 14, particular record format information, then program unit information from a particular meter-monitor field of said 1st meter &amp; monitor information (#4), origin of transmission information from a second field, date and time of transmission information from a third field, decryption key information from the decryption mark of said 1st meter &amp; monitor information (#4), and finally date and time of processing information from clock, 18.</p> <p>When said second set is completed, controller, 20, executes said third specified set which causes controller, 20, to cause buffer/comparator, 14, to transfer said second meter record to recorder, 16, in a predetermined fashion</p>            |
| Column 9 line 68 to column 10 line 2. | The controller, 20, instructs buffer/comparator, 14, what signals to discard and how to mark signals and assemble signal strings. | Page 32 lines 20-21.<br>Page 223 lines 22-33.<br>Page 224 lines 12-18. |  |

|  |  |  |  |
|--|--|--|--|
|  |  |  | then discard all information of said record from its memory and to cause recorder, 16, to process and record said transferred meter record in its preprogrammed fashion. |
|--|--|--|--|

**X. COLUMN 10**

|                        |  |   |   |
|------------------------|--|---|---|
| Column 10 lines 2-4.   | The controller activates digital recorder, 16, thus defining the location in memory of each of the signals and signal strings.   | Page 224 lines 12-18.                         | When said second set is completed, controller, 20, executes said third specified set which causes controller, 20, to cause buffer/comparator, 14, to transfer said second meter record to recorder, 16, ... and to cause recorder, 16, to process and record said transferred meter record in its preprogrammed fashion.  |
| Column 10 lines 4-8.   | The controller, 20, also controls the automatic telephone dialing device, 24, which can automatically output the digital information on the digital recorder, 12, to a remote site through a telephone connection, 22. | Page 273 lines 6-11.                          | Controller, 20, transfers the telephone number, 1-800-AUDITOR, to auto dialer, 24, and causes said dialer, 24, to dial said number. Said first computer answers said telephone call, and in a fashion well known in the art, controller, 20, and said first computer automatically establish telephone communications.  |
| Column 10 lines 8-10.  | The controller, 20, can also set the proper time into clock, 18, should this step be necessary.  | Page 273 lines 21-25.                         | ...causes controller, 20, to cause recorder, 16, to transmit all recorded meter audit records and particular other audit information to telephone connection, 22, which causes said connection, 22, to transmit said records and information to said first computer.  |
| Column 10 lines 10-13. | The controller, 20, operates in a predetermined fashion that can be altered by external means communicating by means of the telephone connection, 22.  | Page 290 lines 14-16.<br>Page 33 lines 18-21. | Automatically, controller, 20, checks the time of the clock, 18, of signal processor, 200, periodically. At a particular commence-enabling time that is a predetermined interval....<br>Controller, 20, has capacity for controlling the operation of all elements of the signal processor....  |
|                        |  | Page 273 lines 16-25.                         | Said instruct-to-receive signal causes said first computer automatically to prepare to receive audit records then to transfer a particular start signal via connection, 22, to controller, 20. Receiving said start signal, sent automatically in response to controller, 20's, instruct-to-receive signal, causes controller, 20, to cause recorder, 16, to transmit all recorded meter audit records and particular other audit information to telephone connection, 22, which causes said connection, 22, to transmit said records and information to said first computer. |
| Column 10 line 14.     | Method of Use at an Intermediate Transmission Point  | See generally page 324                        | Automating Intermediate Transmission Stations   |

| 1981: Spec Reference                   | 1981: Language | 1987: Spec Reference | 1987: Language |
|--|----------------|----------------------|----------------|
| <b>Specification Correlation Chart</b> |                |                      |                |

|                        |   |   |  |
|------------------------|---|---|--|
| Column 10 lines 15-20. | The signal processing apparatus outlined in FIGS. 1, A, 2B, and 2C, and their variants as appropriate, can be used to automate the operations of an intermediate transmission point whether it be a broadcast station transmitting only a single channel of programming or a cable system cablecasting many channels.   | line 7 to page 390 line 11.<br>Page 324 lines 8-17. | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of intermediate transmission stations that receive and retransmit programming. The stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and stations that transmit a single programming transmission to cable systems that cablecast many channels simultaneously. ... stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming.... |
| Column 10 lines 20-23. | They can be used in a facility transmitting television programming, radio programming, and making other electronic transmissions.   | Page 324 lines 12-14.                               | Fig. 6 illustrates Signal Processing Apparatus and Methods at an intermediate transmission station that is a cable television system "head end" and that cablecasts several channels of television programming.  |
| Column 10 lines 24-28. | FIGS. 3A, 3B and 3C illustrates one instance of such use. Figure 3 illustrates the use of Signal Processing Apparatus and Methods at a cable television system "head end" transmission facility that cablecasts several channels of television programming.   | Page 324 lines 18-21.                               | The means and methods for transmitting conventional programming are well known in the art.   |
| Column 10 lines 28-30. | The means for and method of transmission of programming described here is well known in the art.  | Page 324 lines 21-23.                               | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming input means, 62, can receive programming transmissions.   |
| Column 10 lines 30-39. | The facility receives programming from many sources. Transmissions may be received from satellites by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions can be received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions can be received by antenna, 60, and TV demodulator, 61. Other electronic programming input means, 62, can receive programming transmissions. | Page 324 lines 23-31.                               | Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire....<br>...a conventional matrix switch, 75, well known in the art,....  |
| Column 10 lines 40-41. | All of these received transmissions feed into the facility by hard-wire and...  | Page 324 lines 31-33.                               | ...one or more recorder/players, 76 and 78,....  |
| Column 10 lines 41-42. | ...connect, by means of conventional switches (here matrix switch, 75), to...   | Page 324 line 34.                                   | ...apparatus that outputs said transmissions over various channels to the cable system's field distribution system, 93, which apparatus includes cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92.  |
| Column 10 lines 42-43. | ...one or more video recorder/players, 76 and 78,....   | Page 324 line 35.                                   |  |
| Column 10 lines 43-47. | ...and/or to equipment that outputs them over various channels to the cable system's field distribution system, 93, which equipment includes here cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system.  | Page 325 lines 1-4.                                 |  |

| 1981 Specification                     | 1981 Language   | 1987 Specification                   | 1987 Language   |
|--|---|--------------------------------------|---|
| Column 10 lines 48-49.                 | 92.<br>Programming can also be manually delivered to the facility on prerecorded video tapes and videodiscs.  | Page 325 lines 5-6.                  | Programming can also be manually delivered to said station on prerecorded videotapes and videodiscs.  |
| Column 10 lines 49-52.                 | When played on video recorder and players, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted to the field.   | Page 325 lines 6-9.                  | When played on video recorders, 76 and 78, or other similar equipment well known in the art, such prerecorded programming can be transmitted via switch 75 to field distribution system, 93.  |
| Column 10 lines 53-57.                 | In the present art, the identification of incoming programming, however received; the operation of video player and recorder equipment, 76 and 78; and the maintenance of records of programming transmissions are all largely manual operations. | Page 325 lines 10-14.                | In the prior art, the identification of incoming programming, however received; the operation of video player and recorder equipment, 76 and 78; and the maintenance of records of programming transmissions are all largely manual operations.   |
| Column 10 lines 58-60.                 | FIGS. 3A, 3B and 3C shows the introduction of signal processing apparatus and methods to automate these and other operations.   | Page 325 lines 15-16.                | Fig. 6 shows the introduction of signal processing apparatus and methods to automate these and other operations.  |
| Column 10 lines 61-63.                 | Incoming programming transmissions are received at the relevant receiver points, antennas, 50, 57, and 60, and other means, 62.   | Page 324 lines 23-31.                | The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61. Other electronic programming transmissions are received by other programming input means, 62. |
| Column 10 lines 63-64.                 | They are fed along the conventional paths described above.  | Page 324 lines 31-33.                | Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire....  |
| Column 10 lines 64-66.                 | At distribution amplifiers, 63 through 70, each incoming feed is split into two paths.  | Page 325 lines 17-21.                | In line between each of the aforementioned receiver/demodulator/input apparatus, 53, 54, 55, 56, 57, 58, 59, 60, 61, or 62, and matrix switch, 75, is a dedicated distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, that splits each incoming feed into two paths.   |
| Column 10 line 66 to Column 11 line 1. | One is the conventional path whereby programming has flowed and continues to flow to recording devices, 76 and 78, and/or to flow to field distribution system, 93.   | Page 325 lines 21-24.                | One path is the conventional path whereby programming flows from each given receiver/demodulator/input apparatus, 53, 54, 55, 56, 57, 58, 59, 60, 61, or 62, to matrix switch, 75.  |
|  |   | Page 324 line 31 to page 325 line 4. | Each receiver/modulator/input apparatus, 53 through 62, transfers its received transmissions into the station by hard-wire to a conventional matrix switch, 75, well known in the art, that outputs to one or more recorder/players, 76 and 78, and/or to apparatus that outputs said transmissions   |



**Specification Correlation Chart**

|  |  |  |  |
|--|--|--|--|
|  |  |  | over various channels to the cable system's field distribution system, 93, which apparatus includes cable channel modulators, 83, 87, and 91, and channel combining and multiplexing system, 92. |
|--|--|--|--|

**XI. COLUMN 11**

|                        |  |                                      |  |
|------------------------|--|--------------------------------------|--|
| Column 11 lines 1-3.   | The other path flows from each distribution amplifier, 63 through 70, individually to signal processor, 71.  | Page 325 lines 24-27.                | The other path inputs the transmission of said given receiver/demodulator/ input apparatus, 53, 54, 55, 56, 57, 58, 59, 60, 61, or 62, individually to signal processor system, 71.  |
| Column 11 lines 3-5.   | Signal processor, 71, has means, described above, to identify and separate the instruction and information signals from their associated programming and...            | Page 325 line 34 to page 326 line 7. | At signal processor system, 71, which is a system as shown in Fig. 2D, the outputted transmission of each distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70, is inputted into a dedicated decoder (such as decoders, 27, 28, and 29 in Fig. 2D) that processes continuously the inputted transmission of said distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; selects SPAM messages in said transmission that are addresses to ITS apparatus of said intermediate transmission station;.... |
| Column 11 lines 6-7.   | ...pass them, along with information identifying the channel source of each signal, externally to code reader, 72.   | Page 326 lines 7-11.                 | ...adds, ... source mark information that identifies said associated distribution amplifier, 63, 64, 65, 66, 67, 68, 69, or 70; and transfers said selected messages, with said source mark information, to code reader, 72.   |
| Column 11 lines 8-10.  | Signal processor, 71, also has means to record said signals and transfer them to external communications network, 97.  | Page 326 lines 11-15.                | Signal processor system, 71, also has signal processor means to control signal processor system, 71, to record meter-monitor information of said message information, and to transfer recorded information to external communications network, 97.   |
| Column 11 lines 12-14. | Code reader, 72, passes the received signals, with channel identifiers, to cable program controller and computer, 73.  | Page 326 lines 16-18.                | Code reader, 72, buffers and passes the received SPAM message information, with source mark information, to cable program controller and computer, 73.   |
| Column 11 lines 15-17. | Cable program controller and computer, 73, is the central automatic control unit for the transmission facility.  | Page 326 lines 19-20.                | Cable program controller and computer, 73, is the central automatic control unit for the transmitting station.   |
| Column 11 lines 18-21. | The controller/computer, 73, has means for receiving input information from local input, 74, and from remote sources via telephone or other data transfer network, 98. | Page 326 lines 27-30.                | Computer, 73, has means for receiving input information from local input, 74, and from remote stations via telephone or other data transfer network, 98.   |
| Column 11 lines 21-22. | Such input information might include the cable television system's complete programming schedule,...   | Page 326 lines 30-31.                | Such input information can include the complete programming schedule of the station of Fig. 6,....   |
| Column 11 lines 22-24. | ... with each discrete unit of programming identified with a unique program code...  | Page 326 lines 31-33.                | ... with each discrete unit of programming identified by its own "program unit identification code" information.   |
| Column 11 lines 25-28. | Such input information might also indicate when and where  | Page 326 lines 33-35.                | Such input information can indicate when and how the   |

**Specification Correlation Chart**

|                        | the cable head end facility should expect to receive the programming.  |                                       | station should expect to receive each program unit, ....  |
|------------------------|--|---------------------------------------|---|
| Column 11 lines 28-31. | Such input information might also indicate when and on which channel or channels the head end facility should transmit each program unit to cable field distribution system, 93.   | Page 326 line 33 to page 327 line 2.  | Such input information can indicate when and how the station should expect to receive each program unit, when and on which channel or channels and how the station should transmit the unit,....  |
| Column 11 lines 32-37. | By means of the signals, with channel indicators, received from code reader, 72, controller/computer, 73, can determine what specific programming and programming unit has been received by each receiver, 53 through 62, and is passing in line on each individual wire to matrix switch, 75. | Page 328 lines 2-7.                   | By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.   |
| Column 11 lines 38-39. | By comparing identification signals on the incoming programming...   | Page 327 line 35 to page 328 line 13. | Computer, 73, monitors incoming programming by means of the aforementioned dedicated decoders of signal processor system, 71. By means of the SPAM message information, with source mark information, received from code reader, 72, computer, 73, determines what specific program unit has been received by each receiver, 53 through 62, and is passing in line, via each distribution amplifier, 63 through 70, to matrix switch, 75.<br>By comparing selected meter-monitor information of said message information with information of the programming schedule received earlier from input, 74, and/or network, 98, computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming of each received program unit. |
|                        |  | Page 84 lines 26-28.                  | SPAM signals are generated at original transmission stations or intermediate transmission stations and embedded in television or radio or other programming transmissions....   |
|                        |  | Page 28 lines 26-27.                  | ...monitor information that identifies what programming is available,....   |
|                        |  | Page 49 lines 26-27.                  | Meter-monitor segments contain meter information and/or monitor information.  |
| Column 11 line 39.     | with the programming schedule...   | Page 328 lines 9-10.                  | ... with information of the programming schedule,....   |
| Column 11 lines 39-41. | ...received earlier from local input, 74, and/or from a remote site via network, 98,...  | Page 328 line 10.                     | ...received earlier from input, 74, and/or network, 98, computer, 73,....   |
|                        |  | Page 326 lines 28-30.                 | ...receiving input information from local input, 74, and from   |

| 1981 Spec Reference    | 1981 Language   | 1987 Spec Reference                  | 1987 Language  | Specification Correlation Chart |
|------------------------|---|--------------------------------------|--|---------------------------------|
| Column 11 lines 41-43. | ...controller/computer, 73, can determine when and on what channel or channels the head end facility should transmit the programming.   |                                      | remote stations via telephone or other data transfer network, 98.  |                                 |
| Column 11 lines 44-46. | Controller/computer, 73, has means for communicating control information with matrix switch, 75, and video recorder/players, 76 and 78.   | Page 328 lines 11-13.                | ...computer, 73, can determine, in a predetermined fashion, when and on what channel or channels the station of Fig. 6 should transmit the programming ...   |                                 |
| Column 11 lines 46-50. | If incoming programming is meant for immediate transmission, controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer incoming programming to the proper output channel. | Page 328 lines 14-16.                | Computer, 73, has means for communicating control information with matrix switch, 75, and video recorders, 76 and 78, ....   |                                 |
| Column 11 lines 50-54. | For example, if controller/computer, 73, determines that programming incoming via receiver, 53, should be transmitted immediately to the field distribution system, 93, via cable channel modulator, 87, ...      | Page 328 lines 18-22.                | Determining that particular incoming programming is scheduled for immediate retransmission can cause computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer said incoming programming to a scheduled output channel.  |                                 |
| Column 11 lines 54-57. | ...controller/computer, 73, instructs matrix switch, 75, to configure its switches so as to transfer programming transmissions inputted from TV receiver, 53, to the output that leads to modulator, 87.          | Page 328 lines 22-31.                | For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information. ... Receiving said message causes computer, 73, to determine ... that said "code" information matches ... schedule information of programming that is scheduled to be retransmitted immediately upon receipt to field distribution system, 93, via cable channel modulator, 87.   |                                 |
| Column 11 lines 57-60. | Similarly, if controller/computer, 73, determines that incoming programming should be recorded for delayed transmission,...   | Page 328 line 31 to page 329 line 1. | In its preprogrammed fashion, so determining causes computer, 73, to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 63) to matrix switch, 75, from TV receiver, 53, to that output of matrix switch, 75, that outputs to modulator, 87.   |                                 |
| Column 11 lines 60-61. | ... controller/ computer, 73, selects a video recorder/player,  | Page 329 line 2-20.                  | Determining that particular incoming programming is scheduled for time deferred transmission can cause computer, 73, to cause the recording of said programming. For example, computer, 73, receives a given SPAM message that contains given "program unit identification code" information. ... Receiving said message causes computer, 73, to determine, ... that said "code" information matches ... schedule information of programming that is scheduled to be ... transmitted to the field system, 93, at a later time. So determining causes computer, 73, ... to select a video recorder/player, 76 or 78; ... and to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 67) from television receiver, 58, to the output that leads to said selected recorder, 76 or 78. |                                 |
|                        |   | Page 329 lines 13-15.                | So determining causes computer, 73, ... to select a video  |                                 |

| 1987 Spec. Reference | 1987 Language | 1987 Spec. Reference | 1987 Language |
|----------------------|---------------|----------------------|---------------|
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### Specification Correlation Chart

|  |  |                       |  |
|--|--|-----------------------|--|
| Column 11 lines 61-64.                 | 76 or 78, ...<br>... in a predetermined fashion, to record the incoming programming, instructs matrix switch, 75, to transfer the programming to the designated recorder/player, 76 or 78, ... | Page 329 lines 13-20. | recorder/player, 76 or 78; ...<br>... in its preprogrammed fashion, ... to ... record programming; and to cause matrix switch, 75, to configure its switches so as to transfer the programming transmission inputted (via distribution amplifier, 67) from television receiver, 58, to the output that leads to said selected recorder, 76 or 78.  |
| Column 11 lines 64-65.                 | ... and instructs the recorder/player, 76 or 78, to turn on and record the programming.  | Page 329 line 15-16.  | ... to cause said selected recorder, 76 or 78, to turn on and record programming, ...  |
| Column 11 lines 66-67.                 | Recorder/players, 76 and 78, can communicate programming with each other through matrix switch, 75.  | Page 332 lines 24-30. | ... causes computer, 73, ... to cause switch, 75, to configure its switches so as to transfer the output of recorder, 76, to the input of recorder, 78. Automatically, computer, 73, then causes recorder, 76, to play and recorder, 78, to record ... unit D.   |
|  |  | Page 333 lines 15-21. | Computer, 73, causes ... switch, 75, to configure its switches so as to transfer the output of recorder, 78, to the input of recorder, 76. Computer, 73, causes recorder, 78, to play and recorder, 76, to record for the duration of program unit Y. ...  |
| Column 11 line 67 to Column 12 line 1. | If controller/ computer, 73, determines at any time that it is necessary ...   | Page 331 lines 17-33. | Computer, 73, has capacity for automatically organizing the locations of units of prerecorded programming on recording media such as magnetic video tapes loaded on a plurality of recorder/players to play according to a given schedule. ... Caused to organize the locations of said units to play according to said schedule, computer 73, ... |

# Specification Correlation Chart

## XII. COLUMN 12

| Column 12 lines 1-3.<br>... to reorganize the order in which programming units are stored on either recorder/player or on both, ... | 1987 Specification Reference                     | 1987 Language  |
|---|--|--|
| For column 12 lines 3-8 see the support provided above for column 16 line 67 to column 12 line 8.                                   | Page 331 lines 16-25.<br><br>Page 334 lines 1-6. | Computer, 73, has capacity for automatically organizing the locations of units of prerecorded programming on recording media such as magnetic video tapes loaded on a plurality of recorder/players to play according to a given schedule. For example, four spot commercials--program units Q, Y, W, and D—are loaded on 76 and 78. D and Q are recorded on the video tape loaded on recorder, 76, with D first. W and Y are recorded on the tape on recorder, 78, with W first.<br><br>In this fashion, computer, 73, causes units Y and W to be located on different recorders because said units are scheduled to be transmitted simultaneously and units Y then D to be located in sequence on the same recorder because unit D is scheduled to play on the same channel immediately after Y.<br><br>Computer, 73, has capacity for automatically organizing the locations of units of prerecorded programming on recording media such as magnetic video tapes loaded on a plurality of recorder/players to play according to a given schedule. For example, four spot commercials--program units Q, Y, W, and D—are loaded on 76 and 78. D and Q are recorded on the video tape loaded on recorder, 76, with D first. W and Y are recorded on the tape on recorder, 78, with W first. According to the schedule recorded at computer, 73, Q should play first on the cable channel modulated by cable channel modulator, 83; then subsequently Y and W should start to play simultaneously on the channels modulated by modulators, 83 and 87 respectively; then D should play on the channel modulated by modulator, 83, immediately after Y ends. Caused to organize the locations of said units to play according to said schedule, computer 73, ...<br><br>Determining said located space to be available causes computer, 73, to cause recorder, 76, to move forward or rewind to the start of program unit D; to cause recorder, 78, to rewind to the start of said located space; and to cause switch, 75, to configure its switches so as to transfer the output of recorder, 76, to the input of recorder, 78. Automatically, computer, 73, then causes recorder, 76, to play and recorder, 78, to record for the duration of program |

**Specification Correlation Chart**

|                        |  |  |  |  |   |  |
|------------------------|--|--|--|--|---|--|
|                        |  |  | unit D. ...<br><br>Computer, 73, causes recorder, 78, to move forward or rewind to the start of program unit Y; causes recorder, 76, to rewind to the start of the available space; and causes switch, 75, to configure its switches so as to transfer the output of recorder, 78, to the input of recorder, 76. Computer, 73, causes recorder, 78, to play and recorder, 76, to record for the duration of program unit Y. ...<br><br>In this fashion, computer, 73, causes units Y and W to be located on different recorders because said units are scheduled to be transmitted simultaneously and units Y then D to be located in sequence on the same recorder because unit D is scheduled to play on the same channel immediately after Y. | For example, page 333 lines 15-21.<br><br>For example, page 334 lines 1-6. |   |  |
| Column 12 lines 8-12.  | Were this head end facility equipped with automatic operating equipment well known in television studios, controller/computer, 73, could pass appropriate operating instructions to such equipment.                      |  | For example, page 365 line 22 to page 366 line 4.<br><br>For example, page 349 lines 14-20.  |  | Executing the information of said intermediate generation set causes computer, 73, also to generate a ... video image...<br><br>...and to organize the locations of the recorded program units, D, Q, W, and Y, to play according to the schedule inputted by said distribution station in the fashion described above (in the paragraph of the section, "AUTOMATING INTERMEDIATE TRANSMISSION STATIONS," that begins, "Computer, 73, has capacity for automatically organizing the locations of units...." |  |
| Column 12 lines 13-16. | Controller/computer, 73, monitors the operation of the head end facility by means of TV signal decoders, 77, 79, 80, 84, and 88, each of which are shown in detail in Fig. 2A.   |  | Page 327 lines 13-15.  |  | Computer, 73, monitors the operation of the head end station by means of TV signal decoders, 77, 79, 80, 84, and 88, each of which are shown in detail in Fig. 2A.  |  |
| Column 12 lines 16-20. | Controller/computer, 73, has means to communicate control information with each decoder, 77, 79, 80, 84, and 88, to tell each how to operate and how and where to look for signals and to communicate other information. |  | Page 327 lines 15-18.  |  | Computer, 73, has means to communicate control information with each decoder, 77, 79, 80, 84, and 88, to instruct each how to operate and how and where to search for SPAM information.   |  |
| Column 12 lines 20-23. | (This particular embodiment could be expanded to include a decrypter, such as decrypter 10 in Fig. 1, in signals-only line between each decoder, 77, 79, 80, 84, and 88, and controller/computer, 73.)                   |  | Page 327 lines 13-15.<br><br>Page 36 lines 32-33.<br><br>Page 156 line 33.   |  | Computer, 73, monitors the operation of the head end station by means of TV signal decoders, 77, 79, 80, 84, and 88, each of which are shown in detail in Fig. 2A.<br><br>Each decoder is controlled by a controller, 39, 44, or 47, that has buffer, microprocessor, ROM, and RAM capacities.<br><br>Fig. 3A shows one such preferred controller, 39.  |  |



| 1981 Specification     | 1981 Language  | 1987 Spec/Reference   | 1987 Language  | Specification Correlation Chart |
|------------------------|--|-----------------------|--|---------------------------------|
|                        | signals to programing as required.   |                       | information as required.   |                                 |
| Column 12 lines 45-47. | Beyond channel combining system and multiplexer, 92, amplifier, 94, transmits programming to signal processor, 71, and signal processor, 96,   | Page 337 lines 1-8.   | Fig. 6 shows particular signal processor system monitoring apparatus associated with the intermediate station of Fig. 6. In field distribution system, 93, amplifier, 94, inputs programming transmissions to signal processor system, 71, (where said transmissions are inputted to one alternate contact of the switch, 1, of the signal processor of said system, 71), and amplifier, 95, inputs programming transmissions to signal processor, 96, ....  |                                 |
| Column 12 lines 47-50. | which permits both apparatus to monitor and record all the programming transmitted by the cable television system head end facility to field distribution system, 93.                | Page 337 lines 8-12   | ... which permits both signal processor apparatus to monitor all programming transmitted by the cable television system head end station to field distribution system, 93, in the fashion of the signal processor, 200, of Fig. 3 in example #5.   |                                 |
| Column 12 lines 50-53. | Such records can provide automatically for each channel the information that the Federal Communications Commission requires broadcast station operators to maintain as station logs. | Page 337 lines 12-19. | By recording all different received "program unit identification code" information in the fashion described above, said signal processor apparatus can automatically record, for each transmission channel of the station of Fig. 6, information, for example, that the U. S. Federal Communications Commission requires broadcast station operators to maintain as station logs.  |                                 |
| Column 12 lines 54-56. | Signal processors, 71 and 96, can transmit such records of programming to remote sites via telephone or other data transfer networks, 97 and 99 respectively.                        | Page 337 lines 19-21. | And said signal processor apparatus can transmit such records of programming to remote sites via telephone or other data transfer networks, 97 and 99, respectively.   |                                 |
| Column 12 lines 57-58. | This particular embodiment describes a transmission facility transmitting only television programming.   | Page 339 lines 9-11.  | So far this disclosure has described an intermediate transmission station that transmits conventional television programming....   |                                 |
| Column 12 lines 58-61. | The facility could also process and transmit radio programming and other electronic data according to the methods described here ...   | Page 339 lines 11-26. | ... however, the intermediate station automating concepts of the present invention apply to all forms of electronically transmitted programming. The station of Fig. 6 can process and transmit radio programming in the fashions of the above television programming ... Likewise, said station can transmit broadcast print and data communications programming by adding appropriate transmission and recorder/player means and decoder/detector means with control means and using the same processing and transmitting methods. |                                 |
| Column 12 lines 61-64. | ... by adding radio decoder paths and other signal decoder paths, as shown in FIGS 2B and 2C respectively, to signal processors, 71 and 96, and decoders, 77, 79, 80, 84, and 88.    | Page 339 lines 16-21. | ... by adding radio transmission and audio recorder/player means, each with associated radio decoder means as shown in Fig. 2B, wherever television means are shown in Fig. 6, all with similar control means to that shown in Fig. 6 and by processing radio programming with appropriately embedded signals according to the same processing and transmitting  |                                 |



| 1981 Spec Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
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|---------------------|---------------|---------------------|---------------|

### Specification Correlation Chart

|                        |  |   |   |
|------------------------|--|---|---|
| Column 12 lines 64-66. | Likewise, these methods are also applicable in a facility that transmits only a single channel of radio or television programming. | Page 339 lines 26-29.   | methods described above.<br>This example has described methods at a multi-channel intermediate transmission station; the methods are also applicable in a station that transmits only a single channel of television, radio, broadcast print or data. |
| Column 12 line 67.     | <b>Methods for Governing the Reception of Programming</b>  | See generally page 278 line 22 to page 312 line 30.<br><br>See generally page 427 line 8 to page 447 line 23. | <b>Regulating the Reception and Use of Programming</b>  |

### XIII. COLUMN 13

|                        |  |                                      |   |
|------------------------|--|--------------------------------------|---|
| Column 13 lines 1-3.   | FIGs 4A through 4E illustrate methods for governing the reception of programming and the use of signal processor apparatus in these methods.   | Page 286 line 6.                     | Fig. 4 shows the Signal Processing Programming Reception and Use Regulating System ....   |
| Column 13 lines 3-9.   | All of these methods involve the use of one or more devices, of which various models exist well known in the art, for the decryption of programming transmissions and/or one or more other means for interrupting programming transmissions, also well known in the art, which may be as simple as a switch... | Page 286 line 34 to page 287 line 2. | Fig. 4 shows ... three decryptors, 107, 224 and 231, a signal stripper, 229, and, ...-associated with matrix switch, 258.   |
| Column 13 lines 9-12.  | ...and which may have means to interrupt programming by generating noise which noise may be an overlay of another audio and/or video transmission.   | Page 279 lines 21-29.                | Still other techniques, also well known in the art, involve controlling jamming means that spoil transmitted programming at stations that lack authorizing information or are determined not to be duly authorized, thereby degrading the usefulness of said programming. Such other techniques include, for example, inserting so-called "noise" into the transmitted programming which noise may be, for example, overlays of one or more separate transmissions. |
| Column 13 lines 13-14. | FIG 4A shows a signal processor, 100, and a programming decrypter and/or interrupt means, 101, ...   | Page 287 lines 22-27.                | As Fig. 4 shows, signal processor, 200, controls all the aforementioned apparatus. Signal processor, 200, controls ... matrix switch, 258; ... decryptors, 107, 224 and 230;....  |
| Column 13 lines 14-15. | ...each of which receives the same transmission of programming.  | Page 299 lines 19-30.                | Automatically, controller, 20, causes matrix switch, 258, to transfer the ... video ... from said tuner, 215, ... to decryptor, 224, thereby causing said decryptor, 224, to receive ... said video, and to transfer decrypted information of said video ... to matrix switch, 258. Automatically, controller, 20, causes matrix switch, 258, to transfer the information inputted from decryptor, 224, to ... signal processor, 200, ....                          |

| 1987 Specification     | 1987 Language  | 1987 Specification  | 1987 Language   |
|------------------------|--|---------------------|---|
| Column 13 lines 16-17. | The devices, 100 and 101, may receive one channel of programming or multiple channels.   | Page 286 lines 9-12 | The subscriber station of Fig. 4 has capacity for receiving wireless television programming transmissions at a conventional antenna, 199, and a multi-channel cable transmission at converter boxes, 201 and 222.   |
| Column 13 lines 17-20. | The signals that enable the decrypter/interrupter, 101, to decrypt and/or transfer programming uninterrupted may be embedded in the programming or may be elsewhere. | Page 291 lines 9-24 | In the interval between said commence-enabling time and said 8:30 PM time, said head end is caused, ... to transmit a particular enabling SPAM message that consists of ... enable-CC13 instructions and particular enable-WSW instructions that include particular enable-WSW-programming information, ... on the frequency of said master control channel. (Hereinafter said message is called the "local-cable-enabling-message (#7):")<br>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at decoder, 30, (to which said master control channel is inputted), to detect the information of said message, ...<br><br>In example #7, the controller, 20, of the signal processor, 200, of Fig. 4 is preprogrammed at a particular time with particular information that indicates that the subscriber of said station wishes to view said "Wall Street Week" program when transmission of said program on cable cable 13 commences.<br><br>particular master cable control channel (that may or may not be cable channel 13) from the multi-channel cable system<br><br>Executing said 1st-stage-enable-WSW-program instructions causes controller, 20, in the predetermined fashion of said instructions, to affect a first stage of decrypting the video information of the "Wall Street Week" program transmission.<br><br>Automatically, controller, 20, causes matrix switch, 258, to transfer the information of the aforementioned video output inputted from said tuner, 215, to the output that outputs to decryptor, 224, ...<br><br>In the present invention, particular signal processing apparatus (hereinafter called the "signal processor") detect signals and, .... The scanners/switches, working in parallel or series or combinations, transfer the transmissions to |
| Column 13 lines 20-21. | Signal processor, 100, identifies, evaluates, possibly decrypts, and passes...   | Page 15 lines 7-31. |   |

**Specification Correlation Chart**

|                        |  |   |   |
|------------------------|--|---|---|
| Column 13 lines 21-23. | ...a signal or signals to decrypter/interrupter, 101, either at the time of receipt of such programming... |   | <p>receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information; <b>decryptors</b> that may ... and one or more processor/monitors and/or buffer/comparators that organize and transfer the information stream. The processors and buffers can have inputs from each of the receiver/detector lines and <b>evaluate</b> information continuously. From the processors and buffers, the signals may be <b>transferred</b> to external equipment such as computers,....</p> <p>Automatically, controller, 20, causes matrix switch, 258, to transfer the information of said audio portion inputted from said tuner, 215, to the output that outputs to a selected decryptor, 107, thereby causing said decryptor, 107, to receive the information of said audio portion (said information being, as explained above, encrypted digital audio). Automatically, controller, 20, selects information of cipher key Ca from among the information of said portion; transfers said cipher key information to decryptor, 107; and causes decryptor, 107, to commence decrypting its received audio information, using said key information and selected decryption cipher algorithm....</p> <p>The second message conveys the second combining synchronizing command. In example #2, before said message is embedded at the program originating studio and transmitted, the execution segment of said command and all of the meter-monitor segment except for the length-token are encrypted, using standard encryption techniques, well known in the art, that encrypt binary information without altering the number of bits in said information. Partially encrypting the second message in this fashion leaves the cadence information of said message unencrypted. In other words, the "00" header, the length-token, and any padding bits added at the end of said message remain unencrypted. Said message is only partially encrypted in order to enable subscriber stations that lack capacity to decrypt said message to process the cadence information of said message accurately.</p> <p>In example #2, the encryption of said execution segment is done in such a fashion that, after encryption, said segment is identical to a particular execution segment that addresses</p> |
|                        |  | <p>Page 295 lines 24-35.</p> <p>See also page 143, lines 10-30.</p> |   |

**Specification Correlation Chart**

|                        |   |  |  |
|------------------------|---|--|--|
| Column 13 lines 23-24. | ...or at a delayed time or a combination.   |  | URS signal processors, 200, and instructs said processors, 200, to use a particular decryption key J and decrypt the message in which said segment occurs.<br>Controller, 12, receives time information from clock, 18, and has means to delay in a predetermined fashion the transfer of signals when, in a predetermined fashion, delayed transfer is determined to be required.   |
| Column 13 lines 24-25. | The signal or signals instruct decrypter/interrupter, 101, to decrypt the transmission... | Page 298 lines 10-21.  | Receiving the "1st-WSW-program-enabling-message (#7) causes controller, 20, to execute the aforementioned load-and-run-@20 instructions, to load the 1st-stage-enable-WSW- program instructions of the information segment at particular RAM of controller, 20, then to execute the informations so loaded as the so-called machine language instructions of one so-called job.<br>Executing said 1st-stage-enable-WSW-program instructions causes controller, 20, in the predetermined fashion of said instructions, to affect a first stage of decrypting the video information of the "Wall Street Week" program transmission.  |
| Column 13 lines 26-27. | ...or not to decrypt the transmission or to interrupt the transmission...                 | Page 300 lines 30-32.<br><br>Page 301 lines 1-3.<br><br>At a station where<br>Page 301 lines 4-31. | Receiving said check-data-loaded signal causes controller, 20, under control of said 1st-stage-enable-WSW- program instructions, to cause the control processor, 39J....<br><br>A match occurs at the station of Fig 4, indicating that decryptor, 224, is decrypting its received information correctly.<br><br>(Simultaneously other stations compare selected information of said check sequence to selected informations. At each station where a match fails to occur--which indicates that a decryptor, 224, is not decrypting its received information correctly and suggests that the preprogrammed SPAM operating information of said station may have been tampered with—not resulting in a match causes the controller, 20, of said station to cause all information of said 1st-WSW-program- enabling-message (#7) to be erased from all memory of said station ... thereby disabling said apparatus.) |
|                        |   | with respect to page 297 lines 23-29,  | ... a particular SPAM message that consists of ... 1st-stage-enable-WSW-program instructions ... (Hereinafter said   |

| 1981 Spec. Reference   | 1981 Language   | 1987 Spec. Reference  | 1987 Language  | Specification Correlation Chart |
|------------------------|---|---|--|---------------------------------|
|                        |   |   | message is called the "1st-WSW-program-enabling-message (#7)."   |                                 |
|                        |   | Thus preventing through erasure page 301 lines 32-34<br><br>And page 310 lines 20-24.                                   | Resulting in a match causes controller, 20, to execute a particular portion of said 1st-stage-enable-WSW-program instructions.<br><br>...microcomputer, 205, to commence transferring the decrypted information of the transmitted video image to monitor, 202M, thereby causing monitor, 202M, to commence displaying, at its television picture tube, the information of the transmitted television image.<br><br>Receiving said check-data-loaded signal causes controller, 20, under control of said 1st-stage-enable-WSW- program instructions, to cause the control processor, 39J,....<br><br>A match occurs at the station of Fig 4, indicating that decryptor, 224, is decrypting its received information correctly.<br><br>Resulting in a match causes controller, 20, to execute a particular portion of said 1st-stage-enable-WSW-program instructions.<br><br>Receiving said check-data-loaded signal causes controller, 20, under control of said 1st-stage-enable-WSW- program instruct microcomputer, 205, to commence transferring the decrypted information of the transmitted video image to monitor, 202M, thereby causing monitor, 202M, to commence displaying, at its television picture tube, the information of the transmitted television image.<br><br>Automatically, controller, 20, causes matrix switch, 258, to transfer the information of said audio portion inputted from said tuner, 215, to the output that outputs to a selected decryptor, 107, thereby causing said decryptor, 107, to receive the information of said audio portion (said information being, as explained above, encrypted digital audio). Automatically, controller, 20, selects information of cipher key Ca from among the information of said portion; transfers said cipher key information to decryptor, 107; and causes decryptor, 107, to commence decrypting its received audio information, using said key information and selected |                                 |
| Column 13 line 27.     | ...or not to interrupt the transmission.  | Page 300 lines 30-32<br><br>Page 301 lines 1-3<br><br>Page 301 lines 32-34<br><br>with respect to page 310 lines 20-24. |  |                                 |
| Column 13 lines 27-29. | The signal or signals may also inform decryptor/interrupter, 101, how to decrypt... | Page 295 line 24 to page 296 line 3.  |  |                                 |

| 1981 Spec Reference    | 1981 Language  | 1987 Spec Reference                               | 1987 Language  | Specification Correlation Chart |
|------------------------|--|---|--|---------------------------------|
|                        |  | See also page 143, lines 10-30.                   | <p>decryption cipher algorithm C, and outputting decrypted information of the audio portion of the "Wall Street Week" program transmission to matrix switch, 258.</p> <p>The second message conveys the second combining synch command. In example #2, before said message is embedded at the program originating studio and transmitted, the execution segment of said command and all of the meter-monitor segment except for the length-token are encrypted, using standard encryption techniques, well known in the art, that encrypt binary information without altering the number of bits in said information. Partially encrypting the second message in this fashion leaves the cadence information of said message unencrypted. In other words, the "00" header, the length- token, and any padding bits added at the end of said message remain unencrypted. Said message is only partially encrypted in order to enable subscriber stations that lack capacity to decrypt said message to process the cadence information of said message accurately.</p> <p>In example #2, the encryption of said execution segment is done in such a fashion that, after encryption, said segment is identical to a particular execution segment that addresses URS signal processors, 200, and instructs said processors, 200, to use a particular decryption key J and decrypt the message in which said segment occurs.</p> |                                 |
| Column 13 lines 29-31. | ...or interrupt the programing if decrypter/ interrupter, 101, is capable of multiple means. | Page 300 lines 30-32.<br><br>Page 301 lines 4-14. | <p>Receiving said check-data-loaded signal causes controller, 20, under control of said 1st-stage-enable-WSW- program instructions, to cause the control processor, 39J,....</p> <p>(Simultaneously other stations compare selected information of said check sequence to selected information of said 1st-stage-enable-WSW-program instructions. At each station where a match fails to occur--which indicates that a decryptor, 224, is not decrypting its received information correctly and suggests that the preprogrammed SPAM operating information of said station may have been tampered with--not resulting in a match causes the controller, 20, of said station to cause all information of said 1st-WSW-program- enabling-message (#7) to be erased from all memory of said station....</p>   |                                 |
| Column 13 lines 31-32. | The signal or signals may transmit a code or codes necessary                                 | Page 292 lines 7-11.                              | Receiving said message causes controller, 20, to load the  |                                 |

| 1987 Spec Reference    | 1987 Language | 1987 Spec Reference  | 1987 Language | 1987 Spec Reference                  | 1987 Language   |
|------------------------|---------------|--|---------------|--------------------------------------|---|
|                        |               |  |               |                                      | <b>Specification Correlation Chart</b>  |
|                        |               | for the decryption of the transmission.  |               |                                      | enable-CC13 instructions and the enable-WSW instructions of the information segment of said message at particular RAM of controller, 20, and execute said instructions as the machine language instructions of one job.   |
|                        |               |  |               | Page 54 lines 2-6.                   | An information segment can transmit any information that a processor can process. It can transmit compiled machine language code or assembly language code or higher level language programs, all of which are well known in the art.   |
|                        |               |  |               | Page 294 lines 28-35.                | Resulting in a match causes controller, 20, to execute a particular portion of said enable-CC13 instructions.<br>Executing the instructions of said portion causes controller, 20, in the predetermined fashion of the said portion, to cause selected apparatus of the station of Fig. 4 to receive the cable channel 13 transmission, to cause selected apparatus to decrypt the audio portion of said transmission,....  |
|                        |               |  |               | Page 295 line 27 to page 296 line 2. | ...thereby causing said decryptor, 107, to receive the information of said audio portion (said information being, as explained above, encrypted digital audio). Automatically, controller, 20, selects information of cipher key Ca from among the information of said portion; transfers said cipher key information to decryptor, 107; and causes decryptor, 107, to commence decrypting its received audio information, using said key information and selected decryption cipher algorithm C, and outputting decrypted information of the audio portion of the "Wall Street Week" program.... |
| Column 13 lines 33-35. |               | FIG 4A also shows local input, 102, with means for generating and transmitting signals to signal processor, 100. |               | Page 288 lines 1-4.                  | Finally, Fig. 4 shows local input, 225, well known in the art, which has means for generating and transmitting control information to controller, 20, of signal processor, 100.   |
| Column 13 lines 35-36. |               | Local input, 102, is intended to permit a person at a local receiving site...                                    |               | Page 288 lines 4-9.                  | The function of local input, 225, is to provide means whereby a subscriber may input information to the signal processor of his subscriber station, thereby controlling the functioning of his personal signal processor system is specific predetermined fashions that are described more fully below.   |
| Column 13 lines 36-37. |               | ...that is prevented, by any means, from receiving programming...  |               | Page 286 lines 6-8.                  | Fig. 4 shows the Signal Processing Programming Reception and Use Regulating System that is the third feature of the present invention.  |
| Column 13 lines 37-39. |               | ...to instruct signal processor, 100, that the site wants to be  |               | Page 289 lines 22-33.                | In example #7, the controller, 20, of the signal processor,   |

### Specification Correlation Chart

|                        |   |  |  |
|------------------------|---|--|--|
|                        | enabled to receive the programming.   |  | 200, of Fig. 4 is preprogrammed at a particular time with particular information that indicates that the subscriber of said station wishes to view said "Wall Street Week" program when transmission of said program on cable cable 13 commences.<br>(So preprogramming controller, 20, can occur in several fashions. For example, prior to a particular time, a subscriber may enter particular please-fully-enable-WSW-on-CC13-at-particular-8:30 information at local input, 225, and cause said information, in a predetermined fashion, to be inputted to controller, 20, by local input, 225.   |
| Column 13 lines 39-40. | Local input, 102, may also serve other purposes.  | Page 395 lines 30-33.                              | Local input, 225, has capacity to input control instructions to signal processor, 200, and enables the subscriber of the station of Fig. 7 to manually input control instructions at any relevant time.  |
| Column 13 lines 40-41. | Local input, 102, may convey a continuous signal or an occasional signal or a one-time-only signal.   | Page 289 lines 29-33.<br><br>Page 395 lines 30-33. | For example, prior to a particular time, a subscriber may enter particular please-fully-enable-WSW-on-CC13-at-particular-8:30 information at local input, 225, and cause said information, in a predetermined fashion, to be inputted to controller, 20, by local input, 225.  |
| Column 13 lines 42-43. | It may be activated by one or more switches or buttons or combinations.   | Page 288 lines 9-13.                               | Local input, 225, has capacity to input control instructions to signal processor, 200, and enables the subscriber of the station of Fig. 7 to manually input control instructions at any relevant time.  |
| Column 13 lines 43-44. | It may be a computer acting in a predetermined fashion.   | Page 288 lines 13-20.                              | In the preferred embodiment, local input, 225, is actuated by keys that are depressed manually by the subscriber in the fashion of the keys of a so-called touch-tone telephone or the keys of a typewriter (or microcomputer) keyboard.<br>As Fig. 4 shows, microcomputer, 205, also has capacity for inputting control information ..., and in the preferred embodiment, microcomputer, 205, may also automatically substitute for local control, 225, in predetermined fashions in inputting control information to said controller, 20, on the basis of preprogrammed instructions and information previously inputted to said microcomputer, 205. |
| Column 13 lines 44-47. | The signal may be input to signal processor, 100, as described in FIG 1, at buffer/comparator, 8, or signal processor or monitor, 12, or buffer/comparator, 14. | Page 289 lines 29-33.                              | For example, prior to a particular time, a subscriber may enter particular please-fully-enable-WSW-on-CC13-at-particular-8:30 information at local input, 225, and cause said information, in a predetermined fashion, to be inputted to controller, 20, by local input, 225.  |



| 1981 Specification     | 1981 Language   | 1987 Specification                               | 1987 Language  | Specification Correlation Chart |
|------------------------|---|--|--|---------------------------------|
| Column 13 lines 48-53. | In the preferred embodiment, local input, 102, inputs a one-time signal to signal processor, 100, at buffer/comparator, 8, and transmits information in a digital code signal which information is input to local input, 102, in an alphanumeric form manually by means of buttons. | Page 288 lines 9-13.                             | In the preferred embodiment, local input, 225, is actuated by keys that are depressed manually by the subscriber in the fashion of the keys of a so-called touch-tone telephone or the keys of a typewriter (or microcomputer) keyboard.   |                                 |
| Column 13 lines 54-56. | FIGs 4B and 4C illustrate various alternative ways that signals may be input to the signal processor, 100, 103, or 106 as applicable.   | Page 286 lines 6-7.<br><br>Page 311 lines 17-28. | Fig. 4 shows the Signal Processing Programming Reception and Use Regulating System ...<br><br>It is obvious to one of ordinary skill in the art that the foregoing is presented by way of example only and that the invention is not to be unduly restricted thereby since modifications may be made in the structure of the various parts without functionally departing from the spirit of the invention. ... And for example, the transmitted programming may be processed through fewer than three steps of decryption or more than three.   |                                 |
| Column 13 lines 56-60. | The fundamental point is that signals may be received in a manner that requires decryption and/or transmission by a decryptor/interruptor, 104, before they reach the signal processor, as with signal processor 103 in FIG 4B,   | Page 299 lines 19-31.                            | Automatically, controller, 20, causes matrix switch, 258, to transfer the information of the aforementioned video ... from said tuner, 215, ... to decryptor, 224, thereby causing said decryptor, 224, to receive the information of said video portion ... , to decrypt said information, and to transfer decrypted information of said video ... to matrix switch, 258. Automatically, controller, 20, causes matrix switch, 258, to transfer the information inputted from decryptor, 224, to the output that that outputs to signal processor, 200, thereby causing signal processor, 200, to receive said information ....   |                                 |
| Column 13 lines 60-61. | ...or they may not, as with signal processor 100 in FIG 4A,...  | Page 291 lines 9-24.                             | In the interval between said commence-enabling time and said 8:30 PM time, said head end is caused, ... , to transmit a particular enabling SPAM message that consists of... particular enable-CC13 instructions and particular enable-WSW instructions that include particular enable-WSW-programming information, and an end of file signal on the frequency of said master control channel. (Hereinafter said message is called the "local-cable-enabling-message (#7).")<br><br>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at decoder, 30, (to which said master control channel is inputted), to detect the information of said message, .... |                                 |
|                        |   | Page 289 lines 25-27.                            | ... said "Wall Street Week" program when transmission of said program on cable cable 13 commences.   |                                 |

**Specification Correlation Chart**

|                        |  |   |   |
|------------------------|--|---|---|
| Column 13 lines 61-62. | ...or some combination, as with signal processor 106 in FIG 4C.  | Page 290 lines 28-29.<br>Page 291 lines 9-28. | <p>...particular master cable control channel (that may or may not be cable channel 13) from the multi-channel cable system....</p> <p>In the interval between said commence-enabling time and said 8:30 PM time, said head end is caused, ..., to transmit a particular enabling SPAM message that consists of ... particular enable-CC13 instructions and particular enable-WSW instructions that include particular enable-WSW-programming information, and an end of file signal on the frequency of said master control channel. (Hereinafter said message is called the "local-cable-enabling-message (#7).")</p> <p>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at decoder, 30, (to which said master control channel is inputted), to detect the information of said message, select the information of the execution segment in said message, and determine that said selected information matches the aforementioned instance of enable-next-program-on-CC13 information at said particular controlled-function-invoking information location.</p> <p>... "Wall Street Week" program when transmission of said program on cable cable 13 commences.</p> <p>...particular master cable control channel (that may or may not be cable channel 13) from the multi-channel cable system...</p> <p>Automatically, controller, 20, causes matrix switch, 258, to transfer the information of the aforementioned video ... from said tuner, 215, ... to decryptor, 224, thereby causing said decryptor, 224, to receive the information of said video portion ..., to decrypt said information, and to transfer decrypted information of said video ... to matrix switch, 258. Automatically, controller, 20, causes matrix switch, 258, to transfer the information inputted from decryptor, 224, to the output that that outputs to signal processor, 200, thereby causing signal processor, 200, to receive said information ....</p> <p>Decryptor, 10, commences receiving said information, decrypting it using said key J information and transferring it</p> |
| Column 13 lines 63-68. | However, FIGs 4A, 4B, and 4C do not fully illustrate this point because these figures do not reveal that the question of | Page 149 line 27 to page 150 line 6.          |   |

|                      |                |                      |               |
|----------------------|----------------|----------------------|---------------|
| 1981:Spec:Reference. | 1981 Language. | 1987:Spec:Reference. | 1987 Language |
|----------------------|----------------|----------------------|---------------|

### Specification Correlation Chart

|  |   |                                      |  |
|--|---|--------------------------------------|--|
|  | the need for decryption prior to reaching the signal processor depends, among other things, on where the signal or signals are placed in the incoming transmission. |                                      | to controller, 12, as quickly as controller, 12, accepts it. The process of decryption proceeds in a particular fashion. Said decrypt-a-00-header-message instructions cause controller, 20, to cause decryptor, 10, to transfer the first H bits without decrypting or altering said bits in any fashion, to decrypt and transfer the next X bits, to transfer the next L bits without decrypting or altering said bits, to decrypt and transfer the next MMS-L bits, and finally, to transfer any bits remaining after the last of said MMS-L bits without decrypting or altering said bits. In this fashion, the cadence information in said message, which is not encrypted, is transferred by decryptor, 10, to controller, 12, without alteration.   |
| Column 13 line 68 to column 14 line 1. | A decrypter does not necessarily decrypt the entire transmission.   | Page 149 line 27 to page 150 line 6. | Decryptor, 10, commences receiving said information, decrypting it using said key J information and transferring it to controller, 12, as quickly as controller, 12, accepts it. The process of decryption proceeds in a particular fashion. Said decrypt-a-00-header-message instructions cause controller, 20, to cause decryptor, 10, to transfer the first H bits without decrypting or altering said bits in any fashion, to decrypt and transfer the next X bits, to transfer the next L bits without decrypting or altering said bits, to decrypt and transfer the next MMS-L bits, and finally, to transfer any bits remaining after the last of said MMS-L bits without decrypting or altering said bits. In this fashion, the cadence information in said message, which is not encrypted, is transferred by decryptor, 10, to controller, 12, without alteration. |

### XIV. COLUMN 14

|                      |  |                                      |  |
|----------------------|--|--------------------------------------|--|
| Column 14 lines 1-2. | Encrypted transmissions may be only partially encrypted.   | Page 288 line 30 to page 289 line 4. | In example #7, the program originating studio that originates the "Wall Street Week" transmission transmits a television signal that consists of so-called "digital video" and "digital audio," well known in the art. Prior to being transmitted, the digital video information is doubly encrypted, ... The digital audio is transmitted in the clear. |
| Column 14 lines 2-3. | For example, only the video portion of the transmission may be encrypted.  | Page 288 line 33 to page 289 line 3. | Prior to being transmitted, the digital video information is doubly encrypted, ... The digital audio is transmitted in the clear.  |
| Column 14 lines 4.   | The audio portion may remain unencrypted.  | Page 289 lines 3-4.                  | The digital audio is transmitted in the clear.   |
| Column 14 lines 4-9. | In such a circumstance, a connection such as that shown in FIG 4B could pass unencrypted signals to signal processor | Page 297 lines 20-32.                | Subsequently, but still in the interval between said commence-enabling time and said 8:30 PM time, said  |

| 1981 Spec Reference                    | 1981 Language   | 1987 Spec Reference                   | 1987 Language   |
|--|---|---------------------------------------|---|
| <b>Specification Correlation Chart</b> |   |                                       |   |
|  | 103, while passing a transmission unsuitable for satisfactory viewing, if the signals were placed in the audio portion of the overall transmission.             |                                       | program originating studio embeds in the audio portion and transmits a particular SPAM message that consists of ... particular 1st-stage-enable-WSW-program instructions as the information segment information, and an end of file signal. (Hereinafter said message is called the "1st-WSW-program-enabling-message (#7).")<br>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, ... to detect the information of said message ...   |
| Column 14 lines 10-12.                 | ...a method that provides a signal or signals to signal processor, 106, prior to decryption...  | Page 291 lines 9-24.                  | In the interval between said commence-enabling time and said 8:30 PM time, said head end is caused, in a predetermined fashion, to transmit a particular enabling SPAM message that consists of ... enable-CC13 instructions and ... enable-WSW instructions ... on the frequency of said master control channel. (Hereinafter said message is called the "local- cable-enabling-message (#7).")<br>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at decoder, 30, (to which said master control channel is inputted), to detect the information of said message,....   |
| Column 14 lines 12-14.                 | ...which signal or signals enables decryptor/interruptor, 107, to decrypt and/or pass programming transmissions it receives...                                  | Page 294 line 28 to page 295 line 34. | Resulting in a match causes controller, 20, to execute a particular portion of said enable-CC13 instructions.<br>Executing the instructions of said portion causes controller, 20, in the predetermined fashion of the said portion, to cause selected apparatus of the station of Fig. 4 to receive the cable channel 13 transmission, to cause selected apparatus to decrypt the audio portion of said transmission, ... thereby causing said tuner, 215, to receive the information of cable channel 13 and output the audio and video portions of said information to matrix switch, 258, on the separate audio and video outputs of said tuner, 215. Automatically, controller, 20, causes matrix switch, 258, to transfer the information of said audio portion inputted from said tuner, 215, to the output that outputs to a selected decryptor, 107, thereby causing said decryptor, 107, to receive the information of said audio portion (said information being, as explained above, encrypted digital audio). Automatically, controller, 20, ... causes decryptor, 107, to commence decrypting its received audio information, ... |
| Column 14 lines 14-17.                 | ...then signal processor, 106, searches in a predetermined fashion for a second signal or set of signals in the decrypted output of decryptor/interruptor, 107. | Page 296 lines 3-23.                  | Automatically, controller, 20, causes matrix switch, 258, to transfer the information inputted from decryptor, 107, to the output that that outputs to signal processor, 200, thereby   |

# **Specification Correlation Chart**

|                        |   |                                    |   |
|------------------------|---|------------------------------------|---|
|                        |   |                                    | <p>causing signal processor, 200, to receive said information at a particular third alternate contact of switch, 1, (that is not shown in Fig. 2). Automatically, controller, 20, ... causes switch, 1, to connect to said third contact, thereby inputting said information to mixer, 3; and causes mixer, 3, (by control transmission means via oscillator, 6) to transfer said information without any modification; causes the control processor, 39J, of decoder, 30, to cause the filter, 31, and modulator, 32, to transfer said information without any modification; causes said control processor, 39J, ... to cause digital detector, 38, to commence inputting detected information to controller, 39; and causes said control processor, 39J, to commence waiting to receive the header information of a SPAM message.</p> <p>In due course, but still before said 8:30 PM time, said program originating studio embeds in the video portion and transmits particular SPAM check information that is not a SPAM message and consists only of a particular check sequence of binary information followed by an end of file signal. (Hereinafter said SPAM check information is called the "1st-WSW-decryption-check (#7).") ...</p> <p>Receiving the binary information of said check sequence at decoder, 30, causes digital detector, 38, to detect said information and causes control processor, 39J, to....</p> <p>(Simultaneously other stations compare selected information of said check sequence to selected information of said 1st-stage-enable-WSW-program instructions. At each station where a match fails to occur--which indicates that a decryptor, 224, is not decrypting its received information correctly and suggests that the preprogrammed SPAM operating information of said station may have been tampered with--not resulting in a match causes the controller, 20, of said station ... then to transmit the aforementioned appearance-of-tampering information together with complete information of the unique digital code that identifies said station uniquely. ... thereby disabling said apparatus.)</p> <p>Buffer/comparator, 14, receives signal information that is meter information and/or monitor information from controller, 12, and from other inputs; organizes said received information into meter records and/or monitor records (called, in aggregate, hereinafter, "signal records") in a</p> |
| Page 300 lines 10-21.  |   |                                    |   |
| Column 14 lines 17-21. | If this second signal or set of signals fails to appear in the form or forms and place or places and time or times that signal processor, 106, expects, signal processor, 106, can respond in a predetermined fashion and generate... | Page 301 lines 4-31.               |   |
| Column 14 lines 21-22. | ...and record in digital recorder, 16 (referring to Fig. 1),...   | Page 31 line 30 to page 32 line 2. |   |

| 1981:Spec:Reference:                   | 1981:Language   | 1987:Spec:Reference  | 1987:Language  |
|--|---|--|--|
| <b>Specification Correlation Chart</b> |   |  |  |
| Column 14 lines 22-25.                 | ...information that reports this fact in a predetermined fashion and/or transfer this information immediately to a remote site by telephone means and/or ...  | Page 301 lines 4-25.   | predetermined fashion or fashions; and transmits said signal records to a digital recorder, 16, and/or to one or more remote sites.<br>... , then to ... , to cause the auto dialer, 24, and telephone connection, 22, of said station to establish telephone communications with a particular predetermined remote station, in the fashion described above, and causes controller, 20, then to transmit the aforementioned appearance-of-tampering information together with complete information of the unique digital code that identifies said station uniquely. ...<br>And for example, determining that a local station is not preprogrammed properly and/or that decryption ... apparatus are not functioning correctly may cause apparatus of said station to perform other steps of disabling and/or communicating--eg., the local apparatus may disable local apparatus selectively and only partially by, for example, preventing a decoder, ...<br>(Simultaneously other stations compare selected information of said check sequence to selected information of said 1st-stage-enable-WSW-program instructions. At each station where a match fails to occur--which indicates that a decryptor, 224, is not decrypting its received information correctly and suggests that the preprogrammed SPAM operating information of said station may have been tampered with--not resulting in a match causes the controller, 20, of said station to cause all information of said 1st-WSW-program- enabling-message (#7) to be erased from all memory of said station ... thereby disabling said apparatus.) |
| Column 14 lines 25-27.                 | generate and transmit to decryptor/interruptor, 107, instructions that disable decryptor/interruptor, 107.  | Page 311 line 33 to page 312 line 4.<br><br>Page 301 lines 4-31. | Automatically, controller, 20, transfers said decryption cipher key Ba information to a selected decryptor, 224, and causes decryptor, 224, to commence decrypting any received information, using said key information and selected decryption cipher algorithm B, and outputting decrypted information to matrix switch, 258. Automatically, controller, 20, causes matrix switch, 258, to transfer the information of the aforementioned video output inputted from said tuner, 215, to the output that outputs to decryptor, 224, thereby  |
| Column 14 lines 28-32.                 | FIG 4D shows that a multi-stage decryption/interruption process may be used in which transmissions must be processed by one or more additional decryptor/interruptors, 111, that follow decryptor/interruptor, 110. | Page 299 lines 13-27.  |  |

**Specification Correlation Chart**

|                        |   |  |   |
|------------------------|---|--|---|
|                        |   |  | causing said decryptor, 224, to receive the information of said video portion (said information being, as explained above, encrypted digital video), to decrypt said information, and to transfer decrypted information of said video portion to matrix switch, 258.<br><br>Executing said 2nd-stage-enable-WSW-program instructions causes controller, 20, in the predetermined fashion of said instructions, ... to affect a second and last stage of decrypting the digital video information of the "Wall Street Week" program transmission. ... Automatically, controller, 20, causes matrix switch, 258, ... to commence transferring the information inputted from decryptor, 224, to the output that outputs ... to decryptor, 231; ...<br><br>...indicating that decryptors, 224 and 231, are decrypting received information correctly. |
| Page 305 lines 9-31.   |   |  | At switch, 1, and mixers, 2 and 3, signal processor, 26, monitors all frequencies or channels available for reception at the subscriber station of Fig. 2 to identify available programming. The inputted information is the entire range of frequencies or channels transmitted on the cable and the entire range of broadcast television transmissions available to a local television antenna of conventional design.  |
| Page 308 lines 19-20.  |   |  | As Fig. 4 shows, signal processor, 200, controls all the aforementioned apparatus. Signal processor, 200, controls ... decryptors, 107, 224 and 230; ...<br><br>Automatically, controller, 20, ... causes decryptor, 224, to commence decrypting any received information, ... and outputting decrypted information to matrix switch, 258.<br><br>Automatically, controller, 20, causes matrix switch, 258, to transfer ... the aforementioned video output inputted from said tuner, 215, to the output that outputs to decryptor, 224, thereby causing said decryptor, 224, to receive the information of said video portion (said information being, as explained above, encrypted digital video), to decrypt said information, and to transfer decrypted information of said video portion to matrix switch, 258.                             |
| Page 29 lines 8-15.    |   |  | Executing said 2nd-stage-enable-WSW-program instructions causes controller, 20, ... to commence   |
| Page 287 lines 22-29.  |   |  |   |
| Page 299 lines 13-27.  |   |  |   |
| Page 305 lines 9-32.   |   |  |   |
| Column 14 lines 33-35. | FIG 4E illustrates that the signal processor, 112, can monitor multiple channels and pass instructions to multiple decryptor/interruptors,... |  |   |
| Column 14 lines 35-37. | ...each of which processes fewer channels than the multiple channels processed by signal processor, 112.                                      |  |   |

| 1981 Spec Reference                    | 1981 Language  | 1987 Spec Reference   | 1987 Language   |
|--|--|-----------------------|---|
| <b>Specification Correlation Chart</b> |  |                       |   |
|  |  |                       | transferring the information inputted from decryptor, 224, to the output that outputs to signal stripper, 229; to commence transferring the information inputted from signal stripper, 229, to the output that outputs to signal generator, 230; to commence transferring the information inputted from signal generator, 230, to the output that outputs to decryptor, 231; and to commence transferring the information inputted from decryptor, 231, to ....   |
|  |  | Page 29, lines 8-11   | At switch, 1, and mixers, 2 and 3, signal processor, 26, monitors all frequencies or channels available for reception at the subscriber station of Fig. 2 to identify available programming.  |
| Column 14 lines 37-39.                 | FIG 4E illustrates how signals transmitted on one channel can govern the decryption and/or transfer of another channel.          | Page 291 lines 10-24. | ... said head end is caused, in a predetermined fashion, to transmit a particular enabling SPAM message that consists of ... enable-CC13 instructions ... on the frequency of said master control channel. (Hereinafter said message is called the "local- cable-enabling-message (#7).")<br>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at decoder, 30, (to which said master control channel is inputted), to detect the information of said message,... |
|  |  | Page 289 lines 25-27. | ... said "Wall Street Week" program when transmission of said program on cable cable 13 commences. ...  |
|  |  | Page 290 lines 27-29. | ... to select information of a particular master cable control channel (that may or may not be cable channel 13) from the multi-channel cable system...   |
|  |  | Page 294 lines 28-35. | Resulting in a match causes controller, 20, to execute a particular portion of said enable-CC13 instructions.<br>Executing the instructions of said portion causes controller, 20, in the predetermined fashion of the said portion, to cause selected apparatus of the station of Fig. 4 to receive the cable channel 13 transmission, to cause selected apparatus to decrypt the audio portion of said transmission, ...  |
| Column 14 lines 39-41.                 | Signal processor, 112, receives, evaluates, and processes a multiple channel transmission from cable transmission facility, 113. | Page 15 lines 7-31.   | In the present invention, particular signal processing apparatus (hereinafter called the "signal processor") detect signals and, ... The scanners/switches, working in parallel or series or combinations, transfer the transmissions to  |



| 1981 Specification     | 1981 Language   | 1987:Spec:Reference                                     | 1987 Language | Specification Correlation Chart  |
|------------------------|---|---|---------------|--|
|                        |   |   |               | receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information; <b>decryptors</b> that may ... and one or more processor/monitors and/or buffer/comparators that organize and transfer the information stream. The processors and buffers can have inputs from each of the receiver/detector lines and <b>evaluate</b> information continuously. From the processors and buffers, the signals may be <b>transferred</b> to external equipment such as computers, ...   |
| Column 14 lines 42-43. |   | 289 lines 12-15.  |               | In example #7, the intermediate station that retransmits "Wall Street Week" program information to the subscriber station of Fig. 4 is a cable television system head end (such as the head end of Fig. 6).<br>...converter box, 201, ...  |
| Column 14 lines 43-44. | Cable converter box, <b>114</b> , of which many types are now available,....<br>...with means for informing signal processor, <b>112</b> , which channel of programming it is transferring,.... | Page 295 line 8.<br>Page 295 line 6 to page 296 line 7. |               | Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its received information of said frequency (which information is received by means of its multi-channel cable system transmission input) to a selected output frequency and transfer said information;... thereby causing signal processor, 200, to receive said information ...  |
| Column 14 lines 45-46. | ...receives the same multi-channel transmission and transfers one channel to decryptor/interruptor, <b>115</b> .  | Page 295 lines 6-29.                                    |               | Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its received information of said frequency (which information is received by means of its multi-channel cable system transmission input) to a selected output frequency and transfer said information at said frequency to matrix switch, 258. ... Automatically, controller, 20, causes matrix switch, 258, to transfer the information inputted from said box, 201, to the output that outputs to television tuner, 215, and causes said tuner, 215, to tune to said selected frequency, thereby causing said tuner, 215, to receive the information of cable channel 13 and output the audio and video portions of said information to matrix switch, 258, on the separate audio and video outputs of said tuner, 215. Automatically, controller, 20, causes matrix switch, 258, to transfer the information of said audio portion inputted from said tuner, 215, to the |

**Specification Correlation Chart**

|                        |  |                                      |  |
|------------------------|--|--------------------------------------|--|
| Column 14 lines 46-49. | The signal or signals necessary for the decryption of the channel that box, 114, passes to decryptor/interruptor, 115, ... | Page 299 lines 13-25.                | output that outputs to a selected decryptor, 107, thereby causing said decryptor, 107, to receive the information of said audio portion....<br>Automatically, controller, 20, transfers said decryption cipher key Ba information to a selected decryptor, 224, and causes decryptor, 224, to commence decrypting any received information, using said key information and selected decryption cipher algorithm B, and outputting decrypted information to matrix switch, 258. Automatically, controller, 20, causes matrix switch, 258, to transfer the information of the aforementioned video output inputted from said tuner, 215, to the output that outputs to decryptor, 224, thereby causing said decryptor, 224, to receive the information of said video portion (said information being, as explained above, encrypted digital video), to decrypt said information,.... |
| Column 14 lines 49-50. | ...in this case, is not located in the channel transmission.   | Page 298 line 34 to page 299 line 1. | At the station of Fig. 4, the preprogrammed information of said sixteen contiguous bit locations is decryption cipher key Ba.  |
| Column 14 lines 50-51. | They may be preprogrammed into the signal processor (for example,...   | Page 299 lines 13-17.                | Automatically, controller, 20, transfers said decryption cipher key Ba information to a selected decryptor, 224, and causes decryptor, 224, to commence decrypting any received information, using said key information and selected decryption cipher algorithm B,....  |
| Column 14 lines 51-52. | ...in programmable random access memory controller, 20, in Fig. 1)...  | Page 298 line 33 to page 299 line 1. | At the station of Fig. 4, the preprogrammed information of said sixteen contiguous bit locations is decryption cipher key Ba.  |
| Column 14 lines 52-54. | ...or they may be transmitted in a channel other than the channel being transferred from box, 114.                         | Page 293 line 20.                    | ...such as, for example, the RAM of controller, 20,....  |
|                        |  | Page 291 lines 10-20.                | ...said head end is caused, in a predetermined fashion, to transmit a particular enabling SPAM message that consists of ... enable-CC13 instructions and ... enable-WSW instructions that include particular enable-WSW-programming information, ... on the frequency of said master control channel. (Hereinafter said message is called the "local- cable-enabling-message (#7).") ...   |
|                        |  | Page 289 lines 25-27.                | ... said "Wall Street Week" program when transmission of said program on cable cable 13 commences. ...   |

| 1981: Spec. Reference                  | 1981: Language  | 1987: Spec. Reference                 | 1987: Language   |
|--|---|---------------------------------------|--|
| <b>Specification Correlation Chart</b> |   |                                       |  |
|  |   | Page 290 lines 28-29.                 | ...particular master cable control channel (that may or may not be cable channel 13) from the multi-channel cable system....   |
|  |   | Page 294 lines 28-35.                 | Resulting in a match causes controller, 20, to execute a particular portion of said enable-CC13 instructions.<br>Executing the instructions of said portion causes controller, 20, in the predetermined fashion of the said portion, to cause selected apparatus of the station of Fig. 4 to receive the cable channel 13 transmission, to cause selected apparatus to decrypt the audio portion of said transmission,....   |
| Column 14 lines 54-55.                 | If signal processor, 112, has been preprogrammed with the signal or signals...  | Page 298 line 33 to page 299 line 1.  | At the station of Fig. 4, the preprogrammed information of said sixteen contiguous bit locations is decryption cipher key Ba.  |
| Column 14 lines 55-58.                 | ...or if it has been informed of the predetermined fashion for identifying and processing the the needed signal or signals in the incoming transmission from facility, 113,.... | Page 289 line 22 to page 290 line 10. | In example #7, the controller, 20, of the signal processor, 200, of Fig. 4 is preprogrammed at a particular time with particular information that indicates that the subscriber of said station wishes to view said "Wall Street Week" program when transmission of said program on cable cable 13 commences. ...<br>Receiving any given instance of please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to select particular WSW-on-CC13-at-particular-8:30 information in said received information, record said selected information at particular memory, and execute particular receive-authorizing-info-at- appointed-time instructions. ... |
| Column 14 lines 58-59.                 | ...for example, where to look for the signals...  | Page 290 lines 11-12.                 | In a predetermined fashion, executing said instructions causes controller, 20,....   |
|  |   | Page 290 lines 26-30.                 | ...causes the oscillator, 6, then to cause switch, 1, and mixer, 3, to select information of a particular master cable control channel (that may or may not be cable channel 13) from the multi-channel cable system transmission inputted to signal processor, 200,....   |
|  |   | OR Page 298 lines 17-18.              | Executing said 1st-stage-enable-WSW-program instructions causes controller, 20,....  |
|  |   | Page 298 line 34 to page 299 line 1.  | At the station of Fig. 4, the preprogrammed information of said sixteen contiguous bit locations is decryption cipher key  |

|                     |               |                     |               |
|---------------------|---------------|---------------------|---------------|
| 1981 Spec Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
|---------------------|---------------|---------------------|---------------|

# **Specification Correlation Chart**

|                        |  |  |  |
|------------------------|--|--|--|
| Column 14 line 59.     | ...and when...   | Page 290 lines 11-17.<br><br>OR<br><br>Page 297 lines 20-21.           | Ba. ...<br><br>In a predetermined fashion, executing said instructions causes controller, 20, causes prepare to receive a particular enabling SPAM message at a particular time. Automatically, controller, 20, checks the time of the clock, 18, of signal processor, 200, periodically. At a particular commence-enabling time that is a predetermined interval prior to the aforementioned 8:30 PM time....<br><br>Subsequently, but still in the interval between said commence-enabling time and said 8:30 PM time, ...   |
| Column 14 line 59.     | ...and how,...   | Page 290 lines 11-12,<br><br>lines 21-26.<br><br>Page 291 lines 21-28. | In a predetermined fashion, executing said instructions causes controller, 20,....<br><br>...transmits particular preprogrammed enable-next-program-on-CC13 information to the control processor, 391, of said decoder, 30, and causes said control processor, 391, to place one instance of said information at a particular controlled-function-invoking information location; causes the oscillator, 6,....<br><br>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at decoder, 30, (to which said master control channel is inputted), to detect the information of said message, and determine that said execution segment in said message, and select the information of the selected information matches the aforementioned instance of enable-next-program-on-CC13 information at said particular controlled-function-invoking information location. ... |
| Column 14 lines 59-61. | ...signal processor, 112, can transfer the signal to decryptor/interruptor, 115. | Page 295 line 30 to page 296 line 1.<br><br>Page 299 lines 13-18.      | Automatically, controller, 20, selects information of cipher key Ca from among the information of said portion; transfers said cipher key information to decryptor, 107; and causes decryptor, 107, to commence decrypting its received audio information, using said key information and selected decryption cipher algorithm C, and outputting decrypted information of the audio portion....<br><br>Automatically, controller, 20, transfers said decryption cipher key Ba information to a selected decryptor, 224, and causes decryptor, 224, to commence decrypting any received information, using said key information; and selected decryption cipher algorithm B, and outputting decrypted   |

| 1981 Language | 1987 Spec Reference | 1987 Language |
|---------------|---------------------|---------------|
|---------------|---------------------|---------------|

**Specification Correlation Chart**

| 1981 Language                          | 1987 Spec Reference  | 1987 Language  |
|--|--|--|
| Column 14 line 61 to column 15 line 1. | The tuner, 119, informs signal processor, 112, what channel box, 114, is switched to whenever it is switched or turned on. Signal processor, 112, receives this information probably at buffer/comparator, 8 (referring to Fig. 1), which signal processor, 112, processes the signal from tuner, 119, in a predetermined fashion that causes the signal or signals that relate to the necessary proper operation of decryptor/interruptor, 115. | information to matrix switch, 258. ...<br>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its received information of said frequency (which information is received by means of its multi-channel cable system transmission input) to a selected output frequency and transfer said information;... thereby causing signal processor, 200, to receive said information .... |

**XV. COLUMN 15**

|                      |  |   |
|----------------------|--|---|
| Column 15 lines 1-4. | If signal processor, 112, can identify, processes, and transfer the needed signal or signals, decryptor/interruptor, 115, can decrypt and/or transfer the incoming transmission from box, 114, satisfactorily. | Page 291 lines 21-32.<br><br>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at decoder, 30, (to which said master control channel is inputted), to detect the information of said message, select the information of the execution segment in said message, and determine that said selected information matches the aforementioned instance of enable-next-program-on-CC13 information at said particular controlled-function-invoking information location. So determining a match causes the control processor, 39J, to execute particular preprogrammed transfer-this-message-to-controller-20 instructions that are associated with the instance of information at said particular location.<br><br>Resulting in a match causes controller, 20, to execute a particular portion of said enable-CC13 instructions.<br>Executing the instructions of said portion causes controller, 20, in the predetermined fashion of the said portion, to cause selected apparatus of the station of Fig. 4 to receive the cable channel 13 transmission, to cause selected apparatus to decrypt the audio portion of said transmission,.... |
| Column 15 lines 4-7. | If signal processor, 112, cannot transfer the needed signal or signals, decryptor/interruptor, 115, cannot decrypt and/or transfer the programming transmission satisfactorily.                                | Page 294 lines 28-35.<br><br>At each station where a match fails to occur--which indicates that a decryptor, 224, is not decrypting its received information correctly and suggests that the preprogrammed SPAM operating information of said station may have been tampered with....   |
| Column 15 lines 8-9. | FIG 4E also illustrates how it may be necessary to decrypt a programming transmission on one channel...  | Page 301 lines 6-10.<br><br>Executing the instructions of said portion causes controller, 20, in the predetermined fashion of the said portion, to cause selected apparatus of the station of Fig. 4 to   |

**Specification Correlation Chart**

|                        |  |   |  |
|------------------------|--|---|--|
|                        |  |   | <p>receive the cable channel 13 transmission, to cause selected apparatus to decrypt the audio portion of said transmission,....</p> <p>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its received information of said frequency (which information is received by means of its multi-channel cable system transmission input) to a selected output frequency and transfer said information at said frequency to matrix switch, 258. ... Automatically, controller, 20, causes matrix switch, 258, to transfer the information of said audio portion ... to a selected decryptor, 107, thereby causing said decryptor, 107, to receive the information of said audio portion (said information being, as explained above, encrypted digital audio).</p>   |
| Column 15 lines 9-11.  | ...in order to identify and process correctly the programming transmitted on another.        | <p>Page 295 lines 6-30.</p> <p>Page 300 lines 10-12,</p> <p>Page 300 line 30 to page 301 line 3.</p> <p>Page 299 lines 19-23.</p> | <p>In due course, but still before said 8:30 PM time, said program originating studio embeds in the video portion and transmits particular SPAM check information....</p> <p>Receiving said check-data-loaded signal causes controller, 20, under control of said 1st-stage-enable-WSW- program instructions, to cause the control processor, 39J, of decoder, 30, to transfer to controller, 20, selected information of said check sequence of binary information and compare said selected information to selected information of said 1st-stage-enable-WSW-program instructions. A match occurs at the station of Fig 4, indicating that decryptor, 224, is decrypting its received information correctly.</p> <p>...controller, 20, causes matrix switch, 258, to transfer the information of the aforementioned video ... to decryptor, 224, thereby causing said decryptor, 224, to receive the information of said video....</p> |
| Column 15 lines 11-12. | In Fig. 4E, the signal or signals needed to operate decryptor/interruptor, 115, correctly... | <p>Page 298 lines 17-21.</p>  | <p>Executing said 1st-stage-enable-WSW-program instructions causes controller, 20, in the predetermined fashion of said instructions, to affect a first stage of decrypting the video information of the "Wall Street Week" program transmission.</p>  |
|                        |  | <p>Page 299 lines 13-18.</p>  | <p>Automatically, controller, 20, transfers said decryption</p>  |

| 1981 Spec. Reference | 1981 Language | 1987 Spec. Reference | 1987 Language |
|----------------------|---------------|----------------------|---------------|
|----------------------|---------------|----------------------|---------------|

### Specification Correlation Chart

|                        |  |                                      |   |
|------------------------|--|--------------------------------------|---|
|                        |  |                                      | <p>cipher key Ba information to a selected decryptor, 224, and causes decryptor, 224, to commence decrypting any received information, using said key information and selected decryption cipher algorithm B, and outputting decrypted information to matrix switch, 258.</p> <p>Subsequently, but still in the interval between said commence-enabling time and said 8:30 PM time, said program originating studio embeds in the audio portion and transmits a particular SPAM message that consists of ...</p> <p>1st-stage-enable-WSW-program instructions as the information segment information, and an .... (Hereinafter said message is called the</p> <p>"1st-WSW-program-enabling-message (#7).")</p> <p>...to cause selected apparatus to decrypt the audio portion of said transmission, ....</p>  |
| Column 15 lines 13-14. | ...may be on a separate channel of programming that is, itself, encrypted in transmission.                               | Page 297 lines 20-29.                | <p>(Hereinafter said message is called the</p> <p>"1st-WSW-program-enabling-message (#7).")</p> <p>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, ... to execute the aforementioned transfer-this- message-to-controller-20 instructions.</p> <p>Executing said instructions causes said control processor, 39J, to transfer the information of said message to controller, 20, in the fashion of the local-cable- enabling-message (#7).</p> <p>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its received information of said frequency (which information is received by means of its multi-channel cable system transmission input) to a selected output frequency and transfer said information at said frequency to matrix switch, 258. ... Automatically, controller, 20, causes matrix switch, 258, to transfer the information of said audio portion ... to a selected decryptor, 107, thereby causing said decryptor, 107, to receive the information of said audio portion (said information being, as explained above, encrypted digital audio).</p> |
| Column 15 lines 14-15. | Signal processor, 112, can transfer the correct signal or signals...   | Page 297 line 28 to page 298 line 9. |   |
| Column 15 lines 15-16. | ...only if cable converter box, 117, is tuned to the proper channel and ...  | Page 295 lines 6-30.                 |   |
| Column 15 lines 17-19  | ...decryptor/interruptor, 118, can transfer a correctly decrypted transmission to signal processor, 112, for processing. | Page 295 line 30 to page 296 line 6. | <p>Automatically, controller, 20, selects information of cipher key Ca from among the information of said portion; transfers said cipher key information to decryptor, 107; and causes decryptor, 107, to commence decrypting its received audio</p>  |

**Specification Correlation Chart**

|                        |  |   |  |
|------------------------|--|---|--|
| Column 15 lines 20-22. | In any of the cases illustrated in FIGs 4A through 4E, signal processors, 100, 103, 106, 109, and 112, could also operate in a predetermined fashion...  |   | information, ... and outputting decrypted information of the audio portion ... to matrix switch, 258. Automatically, controller, 20, causes matrix switch, 258, to transfer the information inputted from decryptor, 107, to the output that that outputs to signal processor, 200, ....<br>And for example, determining that a local station is not preprogrammed properly and/or that decryption, ... apparatus are not functioning correctly may cause apparatus of said station to perform other steps of disabling and/or communicating....<br>At each station where a match fails to occur--which suggests that the preprogrammed SPAM operating information of said station has been tampered with in an unauthorized fashion....<br>... each station where a match fails to occur--which indicates that a decryptor, 224, is not decrypting its received information correctly....<br>At each station where a ... a match does not result--which indicates that a decryptor, 224 or 231, is not decrypting its received information correctly....<br>...may interrogate remote station apparatus, by telephone, for cipher key and/or cipher algorithm instructions and information. |
| Column 15 lines 22-25. | ...and telephone a remote site to get an additional signal or signals necessary for the proper decryption and/or transfer of incoming programing transmissions.                                    | Page 311 line 33 to page 312 line 2.<br><br>Page 293 lines 32-35.<br><br>Page 301 lines 6-9.<br><br>Page 308 line 35 to page 309 line 3.<br><br>Page 312 lines 6-8. |  |
| Column 15 line 26.     | <b>Methods for Monitoring Reception and Operation</b>  | See generally page 162 line 27 to page 193 line 10, and page 312, line 32 to page 324 line 5.   | <b>Monitoring Receiver Station Reception and Operation</b>   |
| Column 15 lines 27-30. | FIG 5 illustrates methods for monitoring reception and operation which methods can be used to gather statistics on programing usage and associated uses of other data transmissions and equipment. | Page 28 lines 25-29.<br><br>Page 312 line 33 to page 313 line 8.  | [Signal processor 200 in Fig. 7 and elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage.<br><br>Fig. 5 illustrates means and methods for monitoring receiver station reception and use of programming and modes of receiver station operation ... The means and methods facilitate the collection of statistics that identify not only what programming is received and displayed at given subscriber stations but also, for example, which local  |



### programming and which displays

|                        |  |                                       |   |
|------------------------|--|---------------------------------------|---|
| Column 15 lines 30-32. | Such statistics are necessary, for example, in the development of television program ratings.  | Page 28 lines 29-35.                  | programming, how received programming is processed, what local apparatus is controlled in the course of processing .... [Signal processor 200 in Fig. 7 and elsewhere] has capacity for transferring ... said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage.   |
| Column 15 lines 33-39. | FIG 5 shows two conventional TV sets, 132 and 144, a conventional video cassette recorder, 135, a conventional videodisc player, 137, a conventional radio, 141, a conventional microcomputer, 142, a conventional data printer, 146, and a television set, 148, that is capable of displaying two different television programming transmissions at once. | Page 162 lines 31-34.                 | ... signal processing apparatus and methods are used to collect monitor information for so-called "program ratings" (such as so-called "Nielsen ratings") that estimate the sizes of television (or radio) program audiences.   |
| Column 15 lines 39-41. | This is only a representative group of equipment. Many other types of television and radio players and recorders could be included in FIG 5.   | Page 313 line 16 to page 314 line 16. | Fig. 5 shows a variety of input apparatus with capacity for inputting programming (including SPAM information) selectively, via matrix switch, 258, to apparatus of the subscriber station of Fig. 5, intermediate apparatus with capacity for processing and/or recording inputted programming selectively, and output apparatus for displaying or otherwise outputting programming selectively to human senses. |
| Column 15 lines 42-43. | Except for the videodisc player which neither records nor displays programming or other data,...   | Page 314 lines 17-19.                 | Input apparatus include ... Laser disc player, 232, ... videodisc player") ... Intermediate apparatus include microcomputer, 205, radio tuner & amplifier, 213, TV tuner, 215, audio recorder/player, 255, and video recorder/player, 217, all of which are well known in the art ....  |
| Column 15 lines 43-44. | ...each unit has an appropriate associated signal decoder.   | Page 313 lines 24-30.                 | Output apparatus that display or otherwise output programming selectively to human senses include, for example, TV monitor, 202M, multi-picture television monitor, 148, speaker system, 263, and printer, 221,....   |
| Column 15 lines 44-46. | Each decoder is likely to be located physically inside its associated player/ recorder unit.   | Page 314 lines 20-21.                 | (This is only a representative group of equipment; many other types of communications and computer apparatus could be included in Fig. 5.)  |
| Column 15 lines 46-49. | Each is located at a point in the associated unit's circuitry where it receives every embedded signal on the programming   | Page 314 lines 31-33.                 | Input apparatus include ... Laser disc player, 232, ... videodisc player") ... Associated with each intermediate apparatus and output apparatus is one or more appropriate decoders.  |
|                        |  | Page 315 lines 14-19.                 | At other output system, 261, is other decoder, 286. Each decoder is likely to be located physically inside the unit of its associated intermediate or output apparatus.   |
|                        |  |                                       | In the preferred embodiment, each one of said decoders is located at a point in the circuitry of its associated apparatus   |

| 1981 Spec Reference                    | 1981 Language   | 1987 Spec Reference   | 1987 Language   |
|--|---|-----------------------|---|
| <i>Specification Correlation Chart</i> |   |                       |   |
|  | channel or data channel to which the unit is tuned...   |                       | where said one receives (so as to detect all SPAM information on) the information of the selected frequency, channel or transmission to which its associated apparatus is tuned.  |
| Column 15 lines 49-51.                 | ...for which signal the decoder is programmed in a predetermined fashion to search.   | Page 315 lines 20-24. | Each one of said decoders is preprogrammed to detect and transfer to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message in the transmission to which its associated apparatus is tuned.   |
| Column 15 lines 52-56.                 | If a unit like the microcomputer can receive transmissions from more than one source or of more than one kind--television, radio, or other--it will have sufficient apparatus to monitor every channel and kind of transmission it can receive. | Page 317 lines 2-6.   | If a given intermediate or output apparatus can receive transmissions from more than one source or of more than one kind--television, radio, or other--it will have sufficient apparatus to monitor every channel and kind of transmission it can receive.  |
| Column 15 line 57.                     | The signals for which the decoders are monitoring...  | Page 315 lines 20-24. | Each one of said decoders is preprogrammed to detect and transfer to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message in the transmission to which its associated apparatus is tuned.   |
|  |   | Page 44 lines 26-32.  | Commands often contain meter-monitor segments. Said segments contain meter information and/or monitor information, and the information of said segments causes subscriber station signal processor systems to assemble, record, and transmit meter records to remote ratings stations and monitor records to remote ratings stations in fashions that are described more fully below. |
| Column 15 lines 58-60.                 | ...are likely to be unique digital codes that may identify each programming or data unit received and the source of each.   | Page 49 lines 26-28.  | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:  |
| Column 15 lines 60-62.                 | They may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission.  | Page 50 lines 14-20.  | ...unique codes for programming; ... and unique codes that identify the sources and suppliers of computer data.   |
|  |   | Page 49 lines 26-28.  | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such information include:  |
|  |   | Page 50 lines 1-4.    | ...origins of transmissions (eg., network source stations, broadcast stations, cable head end stations); dates and times....  |
| Column 15 lines 62-63.                 | They may convey unique identifier codes for each program or commercial.   | Page 49 lines 26-28.  | Meter-monitor segments contain meter information and/or monitor information. Examples of categories of such   |



| 1981, Spec Reference                   | 1981 Language   | 1987, Spec Reference                    | 1987 Language   |
|--|---|---|---|
| <b>Specification Correlation Chart</b> |   |   |   |
|  |   | Page 314 lines 20-28.                   | Associated with each intermediate apparatus and output apparatus is one or more appropriate decoders. ... At TV tuner, 215, is TV decoder, 282. ... At TV monitor, 202M, is TV decoder, 145.  |
| Column 16 lines 10-11.                 | ...transfers the signals to signal processor, 130,...   | Page 315 lines 6-8.                     | Fig. 5 shows each decoder as having capacity for transferring monitor information to signal processor, 200, by bus communications means.  |
|  |   | Page 315 lines 20-24.                   | Each one of said decoders is preprogrammed to detect and transfer to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message in the transmission to which its associated apparatus is tuned.   |
| Column 16 lines 11-13.                 | ... which has means to identify the source decoder from which each signal that it receives comes.   | Page 322 lines 33-35.                   | ...monitor information (#3) except that the source mark information identifies decoder, 282, rather than decoder, 203.  |
|  |   | Page 174 lines 4-14.                    | Under control of said instructions, said match causes control processor, 39J, to cause matrix switch, 39I, to commence transferring information from control processor, 39J, to buffer/comparator, 14, of signal processor, 200, (while said switch is simultaneously transferring information from control processor, 39J, to the CPU of microcomputer, 205); to transfer to said buffer/comparator, 14, header information that identifies a transmission of monitor information then particular decoder-203 information that is the source mark of said decoder, 203,....  |
| Column 16 lines 13-18.                 | On all programming recorded by video cassette recorder, 135, decoder, 136, receives every relevant signal and transfers such signals to signal processor 130. Radio signal decoder, 138, operates similarly for radio, 141. Other signal decoder, 143, for microcomputer 142. | Page 314 lines 20-26.                   | Associated with each intermediate apparatus and output apparatus is one or more appropriate decoders. At radio tuner & amplifier, 138, are radio decoder, 138, and other decoder, 281. ... At video recorder/player, 217, is TV decoder, 218. At microcomputer, 205, is TV decoder, 203.  |
| Column 16 lines 18-21.                 | TV signal decoder, 145, for TV set, 144 (which may receive programming inputs and associated signals generated or transferred by microcomputer, 142).   | Page 322 line 26 –<br>Page 323 line 11. | The programming of said "Wall Street Week" program is received at tuner, 215, and displayed at monitor, 202M. Accordingly, transmitting said messages will also cause the decoder associated with tuner, 215-- decoder, 282--to detect, process, and transmit monitor information of said messages to onboard controller, 14A, that is identical to said 1st monitor information (#3) and 2nd monitor information (#3) except that the source mark information identifies decoder, 282, rather than decoder, 203. Likewise, unless the Fig. 1B information overlaid at microcomputer, 205, covers and obliterates the embedded information of said messages that is |

| 1981 Spec Reference                    | 1981 Language   | 1987 Spec Reference                 | 1987 Language  |
|--|---|-------------------------------------|--|
| <b>Specification Correlation Chart</b> |   |                                     |  |
|  |   |                                     | inputted from divider, 4, to microcomputer, 205, and would otherwise be transmitted to monitor, 202M, in the combined programming outputted by microcomputer, 205, (which covering and obliterating does not occur in example #3), transmitting said messages will also cause the decoder, 145, to detect, process, and transmit monitor information of said messages to onboard controller, 14A, that is also identical to said 1st and 2nd monitor information (#3) except that the source mark information identifies decoder, 145. |
| Column 16 lines 21-24.                 | Other signal decoder, 147, for printer 146. And TV signal decoders, 150 and 149, for each channel of programming received and displayed by multi-picture TV set, 148.   | Page 314 lines 20-30.               | Associated with each intermediate apparatus and output apparatus is one or more appropriate decoders. ... At multi-picture TV monitor, 148, are TV decoders, 149 and 150. ... At printer, 221, is other decoder, 227.  |
| Column 16 lines 25-32.                 | One particular advantage of these methods for monitoring programming is that, by locating the identifier signals in the audio and/or video and/or other parts of the programming that are conventionally recorded by, for example, conventional video cassette recorders, these methods provide techniques for gathering statistics on what is recorded on video cassette recorders and on how people replay such recordings. | Page 319 lines 23-30.               | One particular advantage of these methods for monitoring programming is that, by embedding the SPAM information in the audio and/or video and/or other parts of the programming that are conventionally recorded by, for example, conventional video cassette recorders, these methods provide techniques for gathering statistics on what is recorded, for example, on video and audio cassette recorders and on how people replay such recordings.   |
| Column 16 lines 32-35.                 | For example, a person might instruct video cassette recorder, 135, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.  | Page 319 lines 30-33.               | For example, a subscriber might instruct video recorder/player, 217, automatically to record the NBC Network Nightly News as broadcast over station WNBC in New York City.   |
| Column 16 lines 35-39.                 | Recorder, 135, might receive the programming over Manhattan Cable TV channel 4 and record the programming from 7:00 PM to 7:30 PM on the evening of July 15, 1985.  | Page 319 line 33 – Page 320 line 2. | Recorder, 217, might receive the programming over Manhattan Cable TV channel 4 and record the programming at the time of original broadcast transmission--from 7:00 PM to 7:30 PM on the evening of July 15, 1985.   |
| Column 16 lines 39-41.                 | Each discrete bit of this information could be conveyed to recorder, 135, in a signal unit or units in the programming so received and recorded.  | Page 320 lines 2-8.                 | Each discrete bit of this information could be transmitted to the subscriber station of Fig. 5 in meter-monitor information ... embedded in the transmitted programming. So embedding and transmitting said meter-monitor information would cause recorder, 217, to record said information.   |
| Column 16 lines 41-43.                 | Decoder, 136, would identify these signals and transfer them to signal processor, 130.  | Page 320 lines 9-10.                | ... decoder, 218, would detect said information and transfer said information to signal processor, 200, ...  |
| Column 16 lines 43-45.                 | Subsequently, the person might play the recorded programming on TV set, 132, from 10:45 PM to 11:15 PM the same evening.  | Page 320 lines 24-26.               | Subsequently, the subscriber might play back the recorded programming and view said programming on TV monitor, 202M, from 10:45 PM to 11:15 PM the same evening.   |
| Column 16 lines 45-47.                 | This time, TV signal decoder, 31, identifies the embedded signals and transfers them to signal processor, 131.  | Page 320 lines 27-31.               | So playing back and transmitting the recorded programming to monitor, 202M, would cause TV signal decoder, 145, to detect said meter-monitor information and transfer said   |

| 1981 Language | 1987 Spec Reference | 1987 Language |
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**Specification Correlation Chart**

|                        |  |   |   |
|------------------------|--|---|---|
| Column 16 lines 47-49. | Prerecorded video cassettes and videodiscs could also contain unique embedded codes that would identify their usage....  | Page 321 lines 1-5.                               | information, together with appropriate source mark information, to signal processor, 131....<br><br>Prerecorded, commercially distributed video and audio tapes, videodiscs, so-called "compact discs" of audio, and so-called "CD ROM" discs of data can also contain unique codes, embedded in the prerecorded programming, that identify the use and usage of said programming....<br>...this method enables any subscriber who records the transmission of said programming at a recorder/player, 217, to access the embedded information of said instructions automatically in this fashion whenever the recorded transmission of said programming is played back....  |
| Column 16 lines 49-50. | ...(and could also transfer instructions to other external equipment).   | Page 476 lines 18-22.                             | At the station of Figs. 7 and 7F, said message is detected at TV signal decoder, 145, and said execution segment information invokes particular controlled function instructions that cause said message to be transferred....  |
| Column 16 lines 51-54. | Signal processor, 130, would probably receive these signals from decoders, 131, 136, 138, 143, 145, 147, 149, and 150) at its buffer/comparator unit, 14 (referring to FIG. 1),... | Page 315 lines 6-10.<br><br>Page 32 lines 24-33.  | Fig. 5 shows each decoder as having capacity for transferring monitor information to signal processor, 200, by bus communications means. Said information is received (and processed) at signal processor, 200, by the onboard controller, 14A, ....<br><br>(In circumstances where information collecting and processing functions are extensive--for example, when a given buffer/comparator, 14, must collect monitor information at a subscriber station with apparatus and/or communications flows that are extensive and complex--buffer/comparator, 14, may operate under control of a dedicated, so-called "on-board" controller, 14A, at buffer/comparator, 14, which is preprogrammed with appropriate control instructions and is controlled by controller, 20, similarly to the fashion in which controller, 12 is controlled by controller, 20.) |
| Column 16 lines 54-56. | ...in a predetermined fashion that would permit signal processor, 130, to identify which decoder the individual signals come from...   | Page 322 lines 33-35.<br><br>Page 174 lines 4-17. | ...that the source mark information identifies decoder, 282, rather than decoder, 203.<br><br>Under control of said instructions, said match causes control processor, 39J, ... to transfer to said buffer/comparator, 14, header information that identifies a transmission of monitor information then particular decoder-203 information that is the source mark of said decoder, 203,....   |

**Specification Correlation Chart**

|                        |   |  |  |   |  |
|------------------------|---|--|--|---|--|
|                        |   |  | Automatically, said instructions cause onboard controller, 14A, to compare the information at said source-mark-@14A memory, in a predetermined fashion, with particular pre-entered source-identification mark information that onboard controller, 14A, retains in memory associated with its pre-entered signal records of monitor information. A match results with that particular decoder-203 source mark information that is associated with the aforementioned record of the prior programming displayed at monitor, 202M.<br>Then said process-monitor-info instructions cause onboard controller, 14A, to initiate a new monitor record that reflects the new "Wall Street Week" programming. | Page 178 lines 27-35.                     | Automatically, said instructions cause onboard controller, 14A, to compare the information at said source-mark-@14A memory, in a predetermined fashion, with particular pre-entered source-identification mark information that onboard controller, 14A, retains in memory associated with its pre-entered signal records of monitor information. A match results with that particular decoder-203 source mark information that is associated with the aforementioned record of the prior programming displayed at monitor, 202M.<br>Then said process-monitor-info instructions cause onboard controller, 14A, to initiate a new monitor record that reflects the new "Wall Street Week" programming. |
| Column 16 lines 56-57. | ...and, in a predetermined fashion, create a signal string...   |  | ...creating a meter record that records the decryption....   | Page 180 lines 1-3.                       | ...creating a meter record that records the decryption....   |
| Column 16 lines 57-58. | ...by appending digital information to the received signal which information might...   |  | Automatically, said instructions cause onboard controller, 14A, in a predetermined fashion, to delete ... except the source mark information associated with said record; to record information of said first named instance of "program unit identification code" information (which is the "program unit identification code" of said "Wall Street Week" program to a particular "program unit identification code" location at said record location; to select particular information located at said SPAM-input- signal-@14A register memory and record information at said record location; to select particular preprogrammed record....   | Page 297 line 15.<br>Page 180 lines 4-15. | Automatically, said instructions cause onboard controller, 14A, in a predetermined fashion, to delete ... except the source mark information associated with said record; to record information of said first named instance of "program unit identification code" information (which is the "program unit identification code" of said "Wall Street Week" program to a particular "program unit identification code" location at said record location; to select particular information located at said SPAM-input- signal-@14A register memory and record information at said record location; to select particular preprogrammed record....   |
| Column 16 lines 59-61. | ...identify the individual decoder, 131, 136, 138, 143, 145, 147, 149, or 150 and the time of receipt at signal processor, 130. |  | In a predetermined fashion, onboard controller, 14A, also records in a particular monitor record field location at said record location a particular display unit identification code that identifies monitor, 202M, as the display apparatus of said new monitor record. In a predetermined fashion, signal processor, 200, records date and time information received from clock, 18, in first and last particular time field...   | Page 181 lines 8-14.                      | In a predetermined fashion, onboard controller, 14A, also records in a particular monitor record field location at said record location a particular display unit identification code that identifies monitor, 202M, as the display apparatus of said new monitor record. In a predetermined fashion, signal processor, 200, records date and time information received from clock, 18, in first and last particular time field...   |
| Column 16 lines 61-62. | To minimize the use of data recorder, 16, buffer/comparator, 14,...   |  | In the preferred embodiment, to minimize unnecessary duplication, prior to retaining monitor information in signal records, onboard controller, 14A, is preprogrammed to....   | Page 323 lines 24-26.                     | In the preferred embodiment, to minimize unnecessary duplication, prior to retaining monitor information in signal records, onboard controller, 14A, is preprogrammed to....   |
| Column 16 lines 62-64. | ...may evaluate signals in a predetermined fashion and discard some signals rather than passing them to the recorder, 16.       |  | Then said process-monitor-info instructions cause onboard controller, 14A, to initiate a new monitor record....  | Page 180 lines 1-2.                       | Then said process-monitor-info instructions cause onboard controller, 14A, to initiate a new monitor record....  |
|                        |   |  | ...select particular information located at said SPAM-input-signal-@14A register memory and record information at said record location; to select particular preprogrammed record....  | Page 180 lines 13-15.                     | ...select particular information located at said SPAM-input-signal-@14A register memory and record information at said record location; to select particular preprogrammed record....  |

| 1981 Spec Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
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**Specification Correlation Chart**

|   |  |  |   |
|---|--|--|---|
| Column 16 lines 64-66.                  | It may compare each signal from a given source such as decoder, 131, with other signals received earlier from the same source. | Page 180 lines 20-21.<br>Page 178 lines 27-35. | ...finally, to discard all unrecorded information of said 1st monitor information (#3)....<br>Automatically, said instructions cause onboard controller, 14A, to compare the information at said source-mark-@14A memory, in a predetermined fashion, with particular pre-entered source-identification mark information that onboard controller, 14A, retains in memory associated with its pre-entered signal records of monitor information. A match results with that particular decoder-203 source mark information that is associated with the aforementioned record of the prior programming displayed at monitor, 202M.<br>To avoid overloading digital recorder, 16, with duplicate data, buffer/comparator, 14, has means for counting and/or discarding duplicate instances of particular signal information.... |
| Column 16 lines 66-67.                  | It may only count incoming duplicate signals...  | Page 32 lines 9-12.                            | In a predetermined fashion, signal processor, 200, records date and time information received from clock, 18, in first and last particular time field locations....   |
| Column 16 lines 67 to column 17 line 1. | ...or it may append a time code to the end of the basic signal string formed around the first received signal ...              | Page 181 lines 12-15.                          |   |

**XVII. COLUMN 17**

|                      |   |                       |   |
|----------------------|---|-----------------------|---|
| Column 17 lines 1-4. | ...and alter this time designation each time a new duplicate signal is identified so that the time code identifies the time of receipt of the last duplicate signal.                | Page 191 lines 11-21. | ...onboard controller, 14A, to locate the instance of "program unit identification code" information at said SPAM-input- signal-@14A register memory, in the fashion described above; to locate the instance of "program unit identification code" information in the aforementioned new monitor record; and to compare said first named instance to said second named instance. A match results. Under control of said process- monitor-info instructions, said match causes onboard controller, 14A, to record date and time information, received from clock, 18, at the aforementioned last particular time field of said new monitor record and, in a ....<br>To avoid overloading digital recorder, 16, with duplicate data, buffer/comparator, 14, has means for counting and/or discarding duplicate instances of particular signal information ... |
| Column 17 lines 4-6. | Whatever method is used, the buffer/comparator, 14, may discard all duplicate signals received.   | Page 32 lines 9-12.   | Automatically, said process- monitor-info instructions cause onboard controller, 14A, in a predetermined fashion, to locate the instance of "program unit identification code" information in said record of the prior programming  |
| Column 17 lines 6-9. | At a time when buffer/comparator, 14, determines in a predetermined fashion that it will receive no further duplicate signals, it transfers the full signal string to recorder, 16. | Page 179 lines 14-24. |   |



| 1981 Spec Reference                    | 1981 Language   | 1987 Spec Reference             | 1987 Language  |
|--|---|---------------------------------|--|
| <b>Specification Correlation Chart</b> |   |                                 |  |
|  |   |                                 | displayed at monitor, 202M, and to compare said first named instance of "program unit identification code" information to said second named instance. No match results.<br>Not resulting in a match causes onboard controller, 14A, to cause signal processor, 200, to record said record of prior programming at recorder, 16.  |
| Column 17 lines 10-12.                 | Signal divider, 139, illustrates another type of monitoring that signal processing apparatus and methods can facilitate.                          | Page 315 lines 25-28.           | In Fig. 5, decoder, 203, which is part of the signal processor system of the station of Fig. 5, not only monitors the operation of its associated apparatus, microcomputer, 205, but also controls said apparatus,....   |
| Column 17 lines 12-13.                 | Signal divider, 139, monitors the use of signals rather than the use of programming.  | Page 315 lines 25-30.           | In Fig. 5, decoder, 203, which is part of the signal processor system of the station of Fig. 5, not only monitors the operation of its associated apparatus, microcomputer, 205, but also controls said apparatus, in the fashions described above, in the execution of SPAM controlled functions.   |
| Column 17 lines 13-16.                 | Every instruction or information signal transmitted from processor, 140, to microcomputer, 142, is also transmitted to signal processor, 130, ... | Page 315 line 30 to 316 line 6. | Decoder, 203, has means for detecting SPAM information in any programming transmission inputted to its associated apparatus, microcomputer, 205, and not only for detecting and transferring to said onboard controller, 14, via said bus means, the meter-monitor information of every unencrypted SPAM message of said transmissions but also for inputting selected detected information to microcomputer, 205, and for controlling microcomputer, 205, in selected fashions. (Fig. 5 also shows that decoder, 203, has capacity for inputting detected information to signal processor, 200, and for receiving from and transferring control information to signal processor, 200.)                |
| Column 17 lines 16-17.                 | ... to be handled, recorded, and transmitted to a remote site with all other monitor information.   | Page 28 lines 25-35             | [Signal processor ... 200 in Fig. 7 ... and elsewhere] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring said meter records automatically to one or more remote automated billing stations that account for programming and information consumption and bill subscribers and said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage. |

| 1981 Spec Reference                    | 1981 Language   | 1987 Spec Reference                   | 1987 Language   |
|--|---|---------------------------------------|---|
| <b>Specification Correlation Chart</b> |   |                                       |   |
| Column 17 lines 17-21.                 | In a predetermined fashion, signal processor, 130, identifies and marks the source of signals as coming from a device, 139, monitoring signal usage rather than programming usage and viewership.   | Page 322 lines 19-26.                 | For example, in the case of the "Wall Street Week" program, transmitting the first and second SPAM messages of example #3 (which are not encrypted) will cause not only decoder, 203, to process the meter-monitor information of said messages and transmit the aforementioned 1st monitor information (#3) and 2nd monitor information (#3), via the monitor information bus means of Fig. 5, to onboard controller, 14A.   |
| Column 17 lines 21-24.                 | In this fashion, besides facilitating data gathering on how programming is used, signal processing apparatus and methods also permit the evaluation of how equipment is used.   | Page 174 lines 4-23.                  | Under control of said instructions, said match causes control processor, 39J, ... to transfer to said buffer/comparator, 14, header information that identifies a transmission of monitor information then particular decoder-203 information that is the source mark of said decoder, 203, ... then all of the received binary information of said first message that is recorded at said SPAM-input-signal memory; ... (Said received information is complete information of the first combining synch command, and said information transmitted to buffer/comparator, 14, is called, hereinafter, the "1st monitor information (#3).") |
| Column 17 lines 28-33.                 | ...control information connections between signal processor, 130, and the remote decoders which would permit signal decoder, 130, to alter the methods of operation of said remote decoders. Such control information connections are included in signal processing apparatus and methods.) | Page 312 lines 33-35.                 | Fig. 5 illustrates means and methods for monitoring receiver station reception and use of programming and modes of receiver station operation and exemplifies one embodiment...   |
| Column 17 lines 34-36.                 | Methods for Governing or Influencing the Operation of Equipment that is External to Conventional Television and Radio Sets by   | Page 318 lines 2-7.                   | By such bus means, onboard controller, 14A, can cause any on or all of said decoders to commence or cease processing and transmitting SPAM monitor information and can cause any one or all of said decoders to change the location or locations that are searched for SPAM information. Fig. 5 shows that, ...   |
| Column 17 lines 36-38.                 | Passing Instruction and Information Signals that are Embedded in Television and Radio Programming Transmissions to Such External Equipment  | Page 390 line 13.                     | <b>Automating Ultimate Receiver Stations</b>  |
| Column 17 lines 39-41.                 | Signal processor apparatus have the ability to identify instruction and information signals in one or more inputted television and radio programming transmissions,...  | Page 390 line 13 to page 556 line 32. | <i>See generally.</i>   |
|  |   | Page 15 lines 16-23.                  | The frequencies may convey television, radio, or other programming transmissions....The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions and convert the encoded signals to digital information; ....  |

| 1987 Spec Reference                    | 1987 Language  | 1987 Spec Reference   | 1987 Language  |
|--|--|---|--|
| <b>Specification Correlation Chart</b> |  |   |  |
| Column 17 lines 42-43.                 | ... identify and discriminate among one or more pieces of external equipment ...   | Page 34 lines 24-26.  | ... identifies the particular apparatus to which said signals are addressed, and outputs said signals to said apparatus...   |
| Column 17 line 43.                     | ... to which such signals are addressed, ...   | Page 44 lines 14-15.  | A command is an instance of signal information that is addressed to particular subscriber station apparatus...   |
| Column 17 line 44.                     | ... and transfer such signals to such equipment as directed.   | Page 95 lines 18-21.  | Receiving the header and execution segment of said first message causes controller, 39, to determine that said message is addressed to ... and to transfer said message to ...   |
| Column 17 lines 45-46.                 | This permits many valuable techniques for facilitating the operation of such external equipment.   | Page 390 lines 26-29.   | The signal processing apparatus outlined in Figs. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of ultimate receiver stations in varieties of ways.   |
| Column 17 lines 47-49.                 | FIG 6 illustrates one possible configuration of equipment in a home or office or other television and/or radio receiving site.   | Page 390 lines 30-35.   | Fig. 7 exemplifies one embodiment of an ultimate receiver station; is a subscriber station in the field distribution system, 93, of the intermediate transmission station of Fig. 6; and may be a home, an office, a theater, a hotel, or any other station where programming such as television or radio is displayed to persons.   |
| Column 17 lines 49-53.                 | Consideration of FIGS. 6F and 6G is facilitated by consideration, first, of individual examples of the types of co-ordinated presentations that the signal apparatus and methods described here can permit.  | Page 396 lines 8-10.  | Features, benefits, and modes of operation of the station of Fig. 7 are demonstrated in the following individual examples.   |
| Column 17 line 54.                     | <b>Governing the Home or Office Environment</b>  | See generally page 396 line 30 to page 406 line 31. (Page 396 line 30 quoted herein.) | <b>Automating U. R. Stations ... Regulating Station Environment</b>  |
| Column 17 lines 55-56.                 | FIG 6A illustrates a method for governing a home or office environment.  | Page 396 lines 31-33.   | Fig. 7A illustrates methods for regulating automatically the environment of subscriber stations such as homes and offices.   |
| Column 17 lines 56-62.                 | One or more channels of television programming transmissions inputted to signal processor, 200, and cable converter box, 201, may contain signals intended for microcomputer, 205, which signals convey information on local weather conditions. Such signals might include current outside temperature and barometric readings. They might include forecast data. | Page 396 line 33 to page 397 line 4.  | Particular SPAM regulating messages are embedded in one or more television program channels that are inputted to signal processor, 200, and cable converter box, 201. Said messages include weather bulletin messages that convey local weather information and instructions, including, for example, current outside temperature information, barometric readings, and forecast data. |
| Column 17 lines 62-64.                 | Signal processor, 200, is always operating and monitors all incoming channels.   | Page 397 lines 17-20.   | Each subscriber station signal processor, 200, operates continuously; scans all incoming channels sequentially at its switch, 1, and mixer, 3, as described in example #5 above;...  |
| Column 17 lines 64-65.                 | It can convey such signals to microcomputer, 205, whenever it receives them.   | Page 397 lines 22-26.   | ...and is preprogrammed at the controller, 39, of its decoder, 30, and at its controller, 12, to transfer to the decoder, 203, of the microcomputer, 205, of its station any detected SPAM message with an instance of particular URS-205 execution  |

| 1981 Spec Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
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|---------------------|---------------|---------------------|---------------|

**Specification Correlation Chart**

|  |   |                       | segment information...  |
|--|---|-----------------------|---|
| Column 17 line 65 to Column 18 line 1. | TV signal decoder, 203, can also identify such signals but only in the one TV channel transferred by box, 201, to TV set, 202, and then only when TV set, 202, is on and operating. | Page 401 lines 19-23. | (TV signal decoder, 203, has capacity, itself, to detect said ...SPAM message but only when TV set, 202, is on and operating and when the frequency of said master channel is the one TV channel transferred by box, 201, to TV set, 202. |

**XVIII. COLUMN 18**

|                      |  |   |   |
|----------------------|--|---|---|
| Column 18 lines 1-2. | Decoder, 203, transfers all received signals to processor or monitor, 204, ...                                 | Page 400 lines 3-4<br><br>Page 35 lines 11-15<br><br>Page 35 lines 24-27<br><br>Page 35 lines 28-31 | Receiving said Weather-Bulletin-125 SPAM message causes decoder, 203, to ...<br><br>... the overall video transmission and passes said information to a digital detector, 34, which acts to detect the digital signal information embedded in said information, using standard detection techniques well known in the art, and inputs detected signal information to controller, 39, which...<br><br>... said audio information that is of interest. The digital detector, 37, detects signal information embedded in said audio information and inputs detected signal information to controller, 39.<br><br>... separately defined transmission to a digital detector, 38, which detects signal information embedded in any other information portion of said television channel signal and inputs detected signal information to controller, 39. |
| Column 18 lines 2-4  | ... which identifies the signals as addressed to microcomputer, 205, and transfers them to microcomputer, 205. | Page 400 lines 6 - 18<br>See Fig. 3A regarding the composition of controller 39                     | Automatically, control processor, 39J, executes particular preprogrammed Weather-Bulletin controlled function instructions that cause said control processor, 39J, to locate the Weather-Bulletin-125 identification information of said message; to determine that said information does not match particular information at particular last-weather-bulletin-identification RAM associated with said control processor, 39J; to input the information of the information segment of said message to the CPU of microcomputer, 205; to retain information of said Weather-Bulletin-125 identification information at said last-weather-bulletin-identification RAM; and to cause said CPU to execute the information so inputted as a machine language job.<br><br>Upon receiving any given instance of signal information,                        |

**Specification Correlation Chart**

|                        |   |   |   |
|------------------------|---|---|---|
| Column 18 lines 4-7.   | Microcomputer, 205, uses such received signals, in a predetermined fashion, to govern the operation of furnace, 206, air conditioning system, 207, and window opening and closing means, 208. | 38 line 8   | <p>controller, 39, 44, or 47, is preprogrammed to process said information automatically. Controller, 39, is preprogrammed ... to correct errors in retained received information by means of forward error correction techniques well known in the art; to convert, as may be required, the corrected information, by means of input protocol techniques well known in the art, into digital information that subscriber station apparatus can receive and process; ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.</p> <p>So executing said information causes microcomputer, 205, to reducing the power usage of said air conditioning system, 207, causes any open windows at said station to be closed.</p> <p>In this fashion, SPAM messages can control and regulate the operation of individual subscriber station controlled apparatus (the thermostat control of furnace, 206, for example, could be similarly controlled) ....</p> |
| Column 18 line 8.      | <b>Co-ordinating a Stereo Simulcast</b>   | <p>Page 400 lines 19-22.</p> <p>Page 401 lines 14-17.</p>   | <b>Automating U. R. Stations ... Coordinating a Stereo Simulcast</b>  |
| Column 18 lines 9-11.  | FIG. 6B illustrates a method for automatic co-ordination of a multimedia presentation in one place, in this case a stereo simulcast.  | <p>See generally page 406 line 33 to page 419 line 31. (Page 406 line 33 quoted herein.)</p> <p>Page 406 lines 34-35.</p> | Fig. 7B illustrates automatic control of one kind of combined medium presentation--a stereo simulcast.  |
| Column 18 lines 11-13. | A person decides to watch a program on television that is stereo simulcast on a local radio station, too.   | Page 407 lines 9-11.  | At the station of Fig. 7 and 7B, a subscriber decides to watch a particular television program the audio of which is stereo simulcast on a local radio station, ....  |
| Column 18 lines 13-14. | The person turns on television, 202, and tunes to the proper channel.   | Page 407 lines 12-15.   | Said subscriber switches power on to TV set, 202, and manually selects the proper channel, which is, for example, channel 13, at the television tuner, 215, of said set, 202, ....  |
| Column 18 lines 14-17. | TV signal decoder, 203, detects signals in the programming transmission on the channel which signals it transfers to monitor or processor, 204.   | Page 408 lines 18-29.   | Periodically thereafter, said program originating studio embeds in said transmission and transmits a particular Tune-Radio-to-FM-104.1 SPAM message that consists of a "01" header, an execution segment of particular activate-simulcast information that is addressed to URS radio decoders, 210, a meter-monitor segment that contains the "program unit identification code" information of said particular television program, appropriate padding bits, an information segment that contains particular 104.1-MHz information, and an end of file signal.   |

| 1987 Language | 1987 Spec Reference | 1987 Language | 1987 Spec Reference |
|---------------|---------------------|---------------|---------------------|
|---------------|---------------------|---------------|---------------------|

### Specification Correlation Chart

|                        |  |  |  |
|------------------------|--|--|--|
| Column 18 lines 17-19. | Monitor or processor, 204, determines that certain signals are addressed to switch, 212, and transfers these signals to switch, 212.           |  | Said message is detected at said decoder, 203, and inputted to said controller, 39, ...<br>Receiving said message causes said controller, 39, to execute particular preprogrammed controlled function instructions that cause said controller, 39, to transfer said message to the radio decoder, 210, of radio, 209.<br><br>Receiving the header and execution segment of said first message causes controller, 39, to determine that said message is addressed to ... , and to transfer said message to ... . So transferring said message is the controlled function that the information said header and execution segment cause controller, 39, to perform.<br><br>Receiving said SPAM message causes said controller, 44, switch power on to ... radio, 209, ...     |
| Column 18 lines 19-22. | These signals instruct switch, 212, to turn power on to radio, 209, and its associated equipment, including a conventional digital tuner, 213. | Page 408 lines 31-34.  |  |
| Column 18 lines 22-24. | Monitor or processor, 204, also identifies signals addressed to tuner, 213, which it transfers accordingly.                                    | Page 95 lines 18-24.   |  |
| Column 18 lines 24-25. | These signals instruct tuner, 213, to tune radio, 209, to the proper frequency for the simulcast.  | Page 410 lines 10-11.  |  |
| Column 18 lines 26-28. | Automatically, by turning TV set, 202, to the channel with a stereo simulcast, the person has activated the stereo simulcast.                  | Page 408 lines 31-34.  |  |
| Column 18 lines 29-30. | FIG. 6B also shows signal processor, 200, monitoring for a data gathering and ratings service.   | Page 95 lines 18-24.   |  |
| Column 18 lines 30-35. | TV signal decoder, 203, and radio signal decoder, 211, also identify certain signals that monitors or processors, 204 and                      | Page 411 lines 10-11<br>Page 88 lines 19-22.<br>Page 408 lines 18-29 | Receiving said SPAM message causes said controller, 44, ... to ... tune radio, 209, to the frequency, ...<br>Thus switching power on to TV set, 202, and selecting channel 13 at television tuner, 215, are the only manual steps necessary to actuate the radio simulcast of said channel at radio, 209.<br><br>In addition, because the station of Fig. 7 (and Fig. 7B) is preprogrammed to collect monitor information, ...<br><br>... monitor information is processed at selected stations for one or more so-called "ratings" agencies (such as the A. C. Nielsen Company) that collect statistics on viewership and programming usage.<br><br>Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that |

**Specification Correlation Chart**

|                               |   |   |  |
|-------------------------------|---|---|--|
|                               | <p><b>210</b> respectively, determine to identify the programs, etc. on the channels to which TV set, <b>202</b>, and radio, <b>209</b>, are tuned,</p> | <p>Page 414 lines 13-27</p> <p>Page 15 lines 16-22</p> <p>Page 411 lines 10-15</p> <p>Page 418 line 23 to page 419 line 15.</p> | <p>consists of ... a meter-monitor segment that contains the "program unit identification code" information of said particular television program, ...</p> <p>Said message is detected at said decoder, <b>203</b>, and inputted to said controller, <b>39</b>, in the above described fashion.</p> <p>Periodically thereafter, said program originating studio embeds in said transmission and transmits a ... message that consists of ... a meter-monitor segment that contains secondary "program unit identification code" information of the audio program unit of said radio transmission ...</p> <p>Said message is detected at said decoder, <b>210</b>, and inputted to said controller, <b>44</b>.</p> <p>The frequencies may convey television, radio, or other programming transmissions. The input transmissions may be received by means of antennas or from hard-wire connections. The scanners/switches, working in parallel or series or combinations, transfer the transmissions to receiver/decoder/detectors that identify signals encoded in programming transmissions ...</p> <p>... because the station of Fig. 7 (and Fig. 7B) is preprogrammed to collect monitor information, receiving said ... message also causes the transmission of monitor information to the onboard controller, <b>14A</b>, of said signal processor, <b>200</b>, in the fashion of example #3 above.</p> <p>Because the information of said ... message is transmitted periodically in said radio programming transmission, a subsequent instance of said information ... causes the SPAM decoder apparatus ... to transfer to the onboard controller, <b>14A</b>, of signal processor, <b>200</b>, ... a particular third transmission of monitor information containing ... "program unit identification code" information of the audio program unit of said radio transmission.</p> |
| <p>Column 18 lines 35-36.</p> | <p>The processors, <b>204</b> and <b>210</b>, transfer this information to signal processor, <b>200</b>, ...</p>  | <p>Page 411 lines 10-15.</p>  | <p>... because the station of Fig. 7 (and Fig. 7B) is preprogrammed to collect monitor information, receiving said ... message also causes the transmission of monitor information to the onboard controller, <b>14A</b>, of said signal processor, <b>200</b>, in the fashion of example #3 above.</p>  |

| 1981 Spec Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
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### Specification Correlation Chart

|                        |  |                                      |   |
|------------------------|--|--------------------------------------|---|
|                        |  | Page 418 line 23 to page 419 line 31 | <p>Because the information of said ... message is transmitted periodically in said radio programming transmission, a subsequent instance of said information ... causes the SPAM decoder apparatus ... to transfer to the onboard controller, 14A, of signal processor, 200, ... a particular third transmission of monitor information containing ... "program unit identification code" information of the audio program unit of said radio transmission.</p> <p>Each decoder is controlled by a controller, 39, 44, or 47, that has buffer, microprocessor, ROM, and RAM capacities.</p> <p>Controller, 39, 44, or 47, has capacity for identifying more than one apparatus to which any given signal should be transferred and for transferring said signal to all said apparatus.</p> <p>The station of Fig. 3 is preprogrammed to collect monitor information, ... Under control of said instructions, said match causes control processor, 39J, ... to commence transferring information from control processor, 39J, to buffer/comparator, 14, of signal processor, 200, ... to transfer to said buffer/comparator, 14, ... all of the received binary information of said first message that is recorded at said SPAM-input-signal memory; ... (Said received information is complete information of the first combining synch command, and said information transmitted to buffer/comparator, 14, is called, hereinafter, the "J" monitor information (#3).")</p> |
| Column 18 lines 36-37. | ...for recording and subsequent transmission to a remote data collection site. | Page 411 line 28 to page 412 line 2. | <p>In the fashion of example #3 above, receiving said first transmission of monitor information causes said onboard controller, 14A, to cause a signal record of prior programming of TV set, 202, to be recorded at the recorder, 16, of signal processor, 200, (and may cause records to be transferred to a remote location) and causes said onboard controller, 14A, to initiate a first signal record, ... that is based on the "program unit identification code" information of said particular television program in</p>  |
|                        |  | Page 419 lines 4-15.                 | <p>In the fashion described above, receiving said third transmission of monitor information ... causes said onboard controller, 14A, to initiate a third signal record, ... that is</p>   |



| 1981 Spec Reference                    | 1981 Language   | 1987 Spec Reference   | 1987 Language  |
|--|---|---|--|
| <b>Specification Correlation Chart</b> |   |   |  |
|  |   |   | based on the aforementioned secondary "program unit identification code" information of the audio program unit of said radio transmission.   |
|  |   | Page 28 lines 25-35.  | [Signal processor 200 in Fig. 7] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring ... said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage. |
| Column 18 lines 38-41.                 | Simultaneously, processor, 200, is also monitoring sequentially all other broadcast transmissions in the locality to gather further data on programming availability to record and transmit to a remote site. | Page 28 lines 25-35.  | [Signal processor 200 in Fig. 7] has capacity, at each station, for receiving monitor information that identifies what programming is available, what programming is used, and how said programming is used and capacity for assembling and retaining monitor records that document said availability and usage. It has capacity for transferring ... said monitor records automatically to one or more remote so-called "ratings" stations that collect statistical data on programming availability and usage. |
|  |   | Page 397 lines 17-20.   | Each subscriber station signal processor, 200, operates continuously; scans all incoming channels sequentially at its switch, 1, and mixer, 3, as described in example #5 above; is preprogrammed at its controller, 20, to ...  |
| Column 18 line 42.                     | <b>Receiving Selected Information and/or Programming.</b>   | See generally page 419 line 33 to page 447 line 23. (Page 419 line 33 quoted herein.) | <b>Automating U. R. Stations ... Receiving Selected Programming</b>  |
| Column 18 lines 43-45.                 | Figure 6C illustrates methods for monitoring multiple programming channels and selecting programming and information in a predetermined fashion.  | Page 419 line 34 to Page 420 line 2.  | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.  |
| Column 18 lines 45-47.                 | In this example, microprocessor, 205, is programmed to hold a portfolio of stocks...  | Page 420 lines 3-4.   | The microprocessor, 205, of the station of Fig. 7 and 7C, is preprogrammed to hold records of a portfolio of stocks...   |
| Column 18 lines 47-48.                 | ...and to receive news about these particular stocks and about the industries they are in.  | Page 420 lines 5-6.   | ...and to receive and process automatically news items about said stocks and about the industries of said stocks.  |
| Column 18 lines 48-51.                 | Several separate news services transmit news on different channels carried on the multi-channel cable transmission to   | Page 420 lines 21-29.   | Two remote stations--remote news-service-A station and remote news-service-B station--transmit, from   |



| 1987 Spec Reference                    | 1987 Language   | 1987 Spec Reference                              | 1987 Language   |
|--|---|--|---|
| <b>Specification Correlation Chart</b> |   |  |   |
| Column 18 lines 58-59.                 | Signal processor, 200, scans sequentially all channels.   | Page 422 lines 23-25.                            | At the station of Fig. 7 and 7C, signal processor, 200, scans sequentially all channels at its switch, 1, mixer, 3, and decoder, 30, in the fashion of example #5.  |
| Column 18 lines 59-62.                 | When it identifies a signal of interest, it relays that information and the channel identifier, in this illustration, to microcomputer, 205.                      | Page 422 line 33 to Page 423 line 10.            | ...cause said controller, 39, to load the binary information of "T" ... of said message at particular working register memory and determine that the information at said memory matches the aforementioned binary information of "T" that is among the news-items-of-interest information ... Determining a match causes said controller, 39, to transmit said message, with channel mark information that identifies the particular channel in which said message was embedded, to said controller, 20, via control information transmission means and to continue functioning in the fashion of example #5. |
| Column 18 lines 62-65.                 | In a predetermined fashion, either microcomputer, 205, or signal processor, 200, instructs tuner, 223, to set cable converter box, 222, to the proper channel,... | Page 423 lines 11-13.<br><br>Page 424 lines 2-9. | Receiving said message causes said controller, 20, to cause a selected cable converter box, 222, to receive the transmission identified by said channel mark; ....<br><br>Then receiving a particular to-223 instruction from said control processor, 20A, causes controller, 20, to transmit particular instructions, via said control information transmission link, to said tuner, 223, thereby causing said tuner, 223, to tune its associated cable converter box, 222, the to the particular channel transmission of said multi-channel cable transmission that is identified by said channel mark.     |
| Column 18 lines 65-67.                 | ...and microcomputer, 200, may record the information in memory or transfer it to printer, 221, for printing ....   | Page 426 lines 10-18.                            | Then automatically, microcomputer, 205, transfers said data to said printer, 221. In so doing, microcomputer, 205, causes printer, 221, in a predetermined fashion, to print said AT&T news item. (Said preprogrammed instructions entered by the subscriber might cause said microcomputer, for example, then to establish a programming communication link with computer memory unit, 256, and to cause said unit, 256, to record said AT&T news item.)   |

# XIX. COLUMN 19

|                      |  |                                      |  |
|----------------------|--|--------------------------------------|--|
| Column 19 lines 1-4. | In the same fashion, microcomputer, 205, may also instruct signal processor, 200, to monitor single or multiple television channels and/or radio channels for programming of interest to | Page 419 line 34 to page 420 line 2. | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected |
|----------------------|--|--------------------------------------|--|

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|---------------------|---------------|---------------------|---------------|
| 1981 Spec Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
|---------------------|---------------|---------------------|---------------|

### Specification Correlation Chart

| play or record.        |   |                       | programming and information.   |
|------------------------|---|-----------------------|--|
|                        |   |                       | The present invention consists of an integrated system of methods and apparatus for communicating programming. The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming as well as combined medium programming. |
| Column 19 lines 5-8.   | In another example, microcomputer, 205 may be preinformed that a certain television program, hypothetically "Wall Street Week," should be televised on TV set, 202, when it is cablecast. | Page 428 lines 21-26. | The program-unit-of-interest information preprogrammed at the microcomputer, 205, of the station of Figs. 7 and 7C includes particular specific-WSW information that reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.                                 |
| Column 19 lines 8-9.   | Microcomputer, 205, is preinformed of the time of cablecasting.   | Page 437 lines 1-3.   | Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8-30 information to the controller, 20.   |
| Column 19 lines 9-12.  | When that time comes, microcomputer, 205, receives no program identification signals whatever from TV signal decoder, 203, which indicates that the set, 202, is not on.                  | Page 444 lines 33-34. | ...decoder, 145, to determine, in a predetermined fashion, that power is not on to monitor, 202M, and to respond by....  |
| Column 19 lines 12-13. | Microcomputer, 205, instructs signal processor, 200, to...  | Page 288 lines 13-20. | As Fig. 4 shows, ...in the preferred embodiment, microcomputer, 205, may also automatically substitute for local control, 225, in predetermined fashions in inputting control information to said controller, 20, on the basis of preprogrammed instructions and information previously inputted to said microcomputer, 205.                   |
|                        |   | Page 445 lines 8-10.  | ... cause microcomputer, 205, to input particular preprogrammed instructions to said controller, 20, ....  |
| Column 19 lines 14-15. | ... pass all program and channel identifiers on all programming being cablecast on the multi-channel system.  | Page 435 lines 16-18. | In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, of the station of Fig. 7 and 7C....  |
|                        |   | Page 248 lines 22-26. | Via a conventional multi-channel cable transmission, in a fashion well known in the art, four channels of conventional television programming and two conventional FM radio signals are inputted to a first alternate contact of switch, 1, and to mixer, 2.   |
|                        |   | Page 250 lines 13-16. | Example #5 begins with the embedding and transmitting, at the remote station that originates the "Wall Street Week" broadcast, of the first message of the "Wall Street Week"  |

| 1981 Spec. Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
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### Specification Correlation Chart

|                        |  |                       |   |
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|                        |  | Page 252 lines 15-35. | <p>program ...</p> <p>Then, in a predetermined fashion, control processor, 39J, determines that said first command contains subject matter meter-monitor information causing said control processor, 39J, to transmit a message that consists of ... execution segment information that is addressed to microcomputer, 205, (and that causes microcomputer, 205, to process the information of the meter- monitor segment immediately following said execution segment information as new programming now being transmitted on the channel of the channel mark of said meter-monitor segment) then meter-monitor segment information that includes the "program unit identification code" and subject matter information of said first command and the channel mark of cable channel 13 ... (Said message whose transmission is caused by receiving said first command enables microcomputer, 205, in a fashion described more fully below, to tune automatically to receive the program that said "program unit identification code" identifies if said program is of interest, ...</p> <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>...microcomputer, 205, may also automatically substitute for local control, 225, in predetermined fashions in inputting control information to said controller, 20, on the basis of preprogrammed instructions and information previously inputted to said microcomputer, 205.</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...</p> |
|                        |  | Page 267 lines 20-28. | <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>...microcomputer, 205, may also automatically substitute for local control, 225, in predetermined fashions in inputting control information to said controller, 20, on the basis of preprogrammed instructions and information previously inputted to said microcomputer, 205.</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...</p>  |
| Column 19 lines 15-18. | Signal processor, 200, receives this instruction from microcomputer, 205, at its processor or monitor, 12, which reacts...           | Page 288 lines 16-20. | <p>...microcomputer, 205, may also automatically substitute for local control, 225, in predetermined fashions in inputting control information to said controller, 20, on the basis of preprogrammed instructions and information previously inputted to said microcomputer, 205.</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, ...</p>  |
| Column 19 lines 18-20. | ...in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/comparator, 14. | Page 435 lines 16-18. | <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the</p>   |
|                        |  | Page 267 lines 20-28. | <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the</p>   |

**Specification Correlation Chart**

|                                     |  |  |  |
|-------------------------------------|--|--|--|
|                                     |  |  | <p>1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, of the station of Fig. 7 and 7C detects one instance of the Select-WSW-Program-Unit SPAM message of the station of Fig. 6 ...</p> <p>Receiving said Select-WSW-Program-Unit message causes the apparatus of said signal processor, 200, to input said message to the microcomputer, 205, of said station.</p> <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.) By contrast, the...</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, of the station of Fig. 7 and 7C detects one instance of the Select-WSW-Program-Unit SPAM message of the station of Fig. 6 ...</p> <p>Receiving said Select-WSW-Program-Unit message causes the apparatus of said signal processor, 200, to input said message to the microcomputer, 205, of said station.</p> <p>Receiving said Select-WSW-Program-Unit message causes decoder, 203, ... to input ... the information segment of said message to the CPU of microcomputer, 205, and to cause said CPU to execute the information so inputted as a machine language job. The information so inputted is the aforementioned determine-whether-to-select instructions that</p> |
| Page 435 lines 16-25.               |  |  |  |
| Page 267 lines 20-28.               | Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X. |  |  |
| Page 435 lines 16-25.               |  |  |  |
| Page 436 line 9 to page 437 line 3. |  |  |  |

| 1981 Spec:Reference                    | 1981 Language   | 1987 Spec Reference                                     | 1987 Language   |
|--|---|---|---|
| <b>Specification Correlation Chart</b> |   |   |   |
|  |   |   | <p>contain said particular specific-WSW information and said please-fully-enable-WSW-on-CC13-at-particular-8:30 information.</p> <p>Executing said determine-whether-to-select instructions causes microcomputer, 205, to... Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, which <i>second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>...to receive the transmission of cable channel 13;...</p> |
| Column 19 lines 23-24.                 | Then, in a predetermined fashion, microcomputer, 205, may...  | <p>Page 439 lines 14-15.</p> <p>Page 437 lines 1-6.</p> | <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>Receiving said please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ...</p> <p>...to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;....</p>  |
| Column 19 lines 24-25.                 | ...instruct tuner, 214, to switch box, 201, to channel X...   | Page 295 lines 6-8.                                     | Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its...   |
|  |   | Page 439 lines 9-15.                                    | ...to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;....  |
| Column 19 lines 25-27.                 | ...and may instruct control system, 220, to turn video recorder, 217, on and record "Wall Street Week," ... | Page 445 lines 24-27.                                   | ...instructions causes controller, 20, ...; to switch power on to video recorder/player, 217,....   |
|  |   | Page 446 lines 18-23.                                   | ...controller, 20, ... causes recorder/player, 217, to record   |

**Specification Correlation Chart**

|                        |  |   |   |
|------------------------|--|---|---|
| Column 19 lines 27-28. | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on  | Page 445 line 24 to page 446 line 1.                              | ...instructions causes controller, 20, to switch power on to monitor, 202M, ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M,....  |
| Column 19 lines 28-29. | and tuner, 215, to tune appropriately to "Wall Street Week."   | Page 445 line 35 to page 446 line 1.<br>Page 446 lines 17-21.     | ...and to tune monitor, 202M, in a predetermined fashion.<br><br>In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio....   |
| Column 19 line 30.     | <b>Co-ordinating Multimedia Presentations in Time</b>  | See generally page 447 line 25 to page 457 line 10.               | <b>Controlling Computer-based Combined Media Operations</b>   |
| Column 19 lines 31-34. | FIG 6C can also illustrate how programming delivered at different times to one place can be co-ordinated to give a multimedia presentation at one time in one place. | Page 18 lines 24-27.<br><br>page 450 line 27 to page 451 line 11. | Fig. 7C is a block diagram of signal processing apparatus and methods selecting receivable information and programming and controlling combined medium, multi-channel presentations.<br><br>(To accomplish all this has required only that the subscriber of microcomputer, 205, [and other subscribers at other stations] cause the installation and connection of the apparatus shown in the figures of this submission, especially Fig. 7 (and 7C); caused his microcomputer, 205, to be preprogrammed as described above; and preinformed microcomputer, 205, of his wish to view said "Wall Street Week" program by causing the aforementioned select-WSW information to be recorded at said microcomputer, 205.)<br>Then the combined medium combining process described above in "One Combined Medium" and in examples #1, #2, #3, #4, etc. commences. And the Fig. 1C combining is displayed.<br>But the combining of Fig. 1C is just part of a larger process.<br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first. |



| 1981:Spec-Reference                    | 1981:Language   | 1987:Spec-Reference                           | 1987:Language   |
|--|---|---|---|
| <b>Specification Correlation Chart</b> |   |   |   |
| Column 19 lines 35-37.                 | Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day. | Page 449 lines 13-26.                         | Each weekday after 4:30 PM, a remote stock-price-data transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. (Said remote station transmits said closing stock price data and causes specific subscriber stations to select and process their specific information of interest in the fashion in which remote news-service-A station transmitted the AT&T news item and caused selected stations to select and process, in their specific fashions, the information of said item.) |
| Column 19 lines 37-39.                 | It may receive these directly or it may automatically query a data service for them in a predetermined fashion.                                     | Page 449 lines 26-35.                         | Alternatively, microcomputer, 205, is caused in a predetermined fashion (for example, by a SPAM message a given transmission monitored by signal processor, 200, in any of the above described fashions) automatically to telephone a remote data service computer, by means of network, 262, in a fashion well known in the art, and to cause said remote computer to select and transmit the particular closing price datum or data of the stock or stocks of the portfolio of said microcomputer, 205, thereby causing said microcomputer, 205, to record said datum or data in a predetermined fashion.   |
| Column 19 lines 39-41.                 | It records those prices that relate to the stocks in its stored portfolio.  | Page 449 lines 13-20.                         | Each weekday after 4:30 PM, a remote stock-price-data transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer.   |
| Column 19 lines 42-43.                 | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to...  | Page 450 lines 31-32.<br>Page 21 lines 20-23. | ...caused his microcomputer, 205, to be preprogrammed as described above,...  |
| Column 19 lines 43-44.                 | ...instruction signals embedded in the "Wall Street Week" programing transmission.  | Page 21 lines 23-24.                          | Microcomputer, 205, is preprogrammed to ... respond ... to ...  |
| Column 19 lines 45-46.                 | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening...   | Page 451 lines 6-7.                           | ... instruction signals embedded in the "Wall Street Week" programing transmission.<br>When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...  |
| Column 19 lines 46-48.                 | ...several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205.   | Page 23 line 35 to page 24 line 4.            | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said  |

**Specification Correlation Chart**

|                        |  |                                   |  |
|------------------------|--|-----------------------------------|--|
|                        |  |                                   | second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.  |
|                        |  | Page 37 line 26 to page 38 line 8 | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus.  |
| Column 19 lines 48-53. | These signals instruct microcomputer, 205, to generate several graphic video overlays, which microcomputer, 205, has the means to generate and transmit and TV set, 202, has the means to receive and display, and to transmit these overlays to TV set, 202,... | Page 24 lines 5-16.               | Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set." |
|                        |  | Page 451 lines 7-11.              | ...the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.  |
| Column 19 line 53.     | ...upon command.   | Page 26 lines 20-28.              | (Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)  |
| Column 19 line 53-56.  | Subsequently in the program, the host says, "Here is what the Dow Jones Industrials did is the past week," and a studio generated graphic is pictured.   | Page 25 lines 26-33.              | During this time the program may show the so-called "talking head" of the host as he describes the behavior of the stock market over the course of the week. Then the host says, "Now as we turn to the graphs, here is what the Dow Jones Industrials did in the week just past," and a studio  |

| 1981 Spec. Reference                    | 1981 Language  | 1987 Spec Reference                     | 1987 Language   |
|---|--|---|---|
| <b>Specification Correlation Chart</b>  |  |   |   |
|   |  |   | generated graphic is transmitted. Fig. 1B shows the image of said graphic as it appears on the video screen of TV monitor, 202M.  |
| Column 19 lines 56-59.                  | The host then says, "Here is what the broader NASDAQ index did in the week past," and a studio generated graphic overlay is displayed on top of the first graphic. | Page 451 lines 25-32.                   | For example, the Fig. 1C display of user specific overall stock portfolio performance could be followed by second and third displays that analyze portions of the subscriber's portfolio—eg., the portion invested in New York Stock Exchange listed stocks in comparison to the so-called "NYSE" index and the portion invested in so-called "over-the-counter" stocks in comparison to the so-called "NASDAQ" index.                                  |
| Column 19 lines 59-60.                  | Then the host says, "And here is what your portfolio did."   | Page 25 lines 33-34.                    | Then the host says, "And here is what your portfolio did."  |
| Column 19 lines 60-62.                  | At this point, an instruction signal is generated in the television studio originating the programming ...   | Page 25 line 34-36.                     | At this point, an instruction signal is generated at said program originating studio,....   |
| Column 19 lines 62-63                   | ... and is transmitted in the programming transmission.  | Page 25 line 35 to page 26 line 1.      | ... embedded in the programming transmission, and transmitted.  |
| Column 19 lines 63-64.                  | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.  | Page 26 lines 1-2.                      | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...   |
|   |  | Page 37 line 26 to page 38 line 8.      | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
| Column 19 lines 64-66.                  | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...   | Page 26 lines 1-8.                      | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |
| Column 19 lines 67 to column 20 line 2. | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.  | Page 451 line 3.<br>Page 26 lines 8-11. | And the Fig. 1C combining is displayed.<br><br>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the subscriber's own portfolio performance overlaid on the studio generated graphic.  |

|                     |               |                     |               |
|---------------------|---------------|---------------------|---------------|
| 1981 Spec Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
|---------------------|---------------|---------------------|---------------|

# **Specification Correlation Chart**

## **XX. COLUMN 20**

|                        |   |   |   |
|------------------------|---|---|---|
| Column 19 lines 1-4.   | In the same fashion, microcomputer, 205, may also instruct signal processor, 200, to monitor single or multiple television channels and/or radio channels for programing of interest to play or record. | Page 419 line 34 to page 420 line 2.<br><br>Page 11 lines 5-10. | Fig. 7C illustrates methods for monitoring multiple programming channels, selecting programming and information of interest, and receiving said selected programming and information.<br><br>The present invention consists of an integrated system of methods and apparatus for communicating programming. The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming as well as combined medium programming.<br><br>The program-unit-of-interest information preprogrammed at the microcomputer, 205, of the station of Figs. 7 and 7C includes particular specific-WSW information that reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted. |
| Column 19 lines 5-8.   | In another example, microcomputer, 205 may be preinformed that a certain television program, hypothetically "Wall Street Week," should be televised on TV set, 202, when it is cablecast.               | Page 428 lines 21-26.   | Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular-8:30 information to the controller, 20, ... decoder, 145, to determine, in a predetermined fashion, that power is not on to monitor, 202M, and to respond by ....  |
| Column 19 lines 8-9.   | Microcomputer, 205, is preinformed of the time of cablecasting.   | Page 437 lines 1-3.   | As Fig. 4 shows, ... in the preferred embodiment, microcomputer, 205, may also automatically substitute for local control, 225, in predetermined fashions in inputting control information to said controller, 20, on the basis of preprogrammed instructions and information previously inputted to said microcomputer, 205.   |
| Column 19 lines 9-12.  | When that time comes, microcomputer, 205, receives no program identification signals whatever from TV signal decoder, 203, which indicates that the set, 202, is not on.                                | Page 444 lines 33-34.   | ... cause microcomputer, 205, to input particular preprogrammed instructions to said controller, 20, ...  |
| Column 19 lines 12-13. | Microcomputer, 205, instructs signal processor, 200, to ...   | Page 288 lines 13-20.<br><br>Page 445 lines 8-10.               | In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, of the station of Fig. 7 and 7C....   |
| Column 19 lines 14-15. | ... pass all program and channel identifiers on all programming being cablecast on the multi-channel system.  | Page 435 lines 16-18.<br><br>Page 248 lines 22-26.              | Via a conventional multi-channel cable transmission, in a fashion well known in the art, four channels of conventional television programming and two conventional FM radio signals are inputted to a first alternate contact of switch, 1, and to mixer, 2.  |

# Specification Correlation Chart

|                        |   |                       |   |
|------------------------|---|-----------------------|---|
|                        |   | Page 250 lines 13-16. | <p>Example #5 begins with the embedding and transmitting, at the remote station that originates the "Wall Street Week" broadcast, of the first message of the "Wall Street Week" program ...</p> <p>Then, in a predetermined fashion, control processor, 39J, determines that said first command contains subject matter meter-monitor information causing said control processor, 39J, to transmit a message that consists of ... execution segment information that is addressed to microcomputer, 205, (and that causes microcomputer, 205, to process the information of the meter- monitor segment immediately following said execution segment information as new programming now being transmitted on the channel of the channel mark of said meter-monitor segment) then meter-monitor segment information that includes the "program unit identification code" and subject matter information of said first command and the channel mark of cable channel 13 ... (Said message whose transmission is caused by receiving said first command enables microcomputer, 205, in a fashion described more fully below, to tune automatically to receive the program that said "program unit identification code" identifies if said program is of interest, ...</p> <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.) ... microcomputer, 205, may also automatically substitute for local control, 225, in predetermined fashions in inputting control information to said controller, 20, on the basis of preprogrammed instructions and information previously inputted to said microcomputer, 205.</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal</p> |
|                        |   | Page 252 lines 15-35. |   |
|                        |   | Page 267 lines 20-28. |   |
| Column 19 lines 15-18. | Signal processor, 200, receives this instruction from microcomputer, 205, at its processor or monitor, 12, which reacts,... | Page 288 lines 16-20. |   |
| Column 19 lines 18-20. | ...in a predetermined fashion by passing also externally to microcomputer, 205, all signals that it passes to buffer/       | Page 435 lines 16-18. |   |

**Specification Correlation Chart**

|                        |  |                                     |                       |  |
|------------------------|--|-------------------------------------|-----------------------|--|
|                        | comparator, 14.  |                                     | processor, 200, ...   | <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.)</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, of the station of Fig. 7 and 7C detects one instance of the Select-WSW-Program-Unit SPAM message of the station of Fig. 6 ...</p> <p>Receiving said Select-WSW-Program-Unit message causes the apparatus of said signal processor, 200, to input said message to the microcomputer, 205, of said station.</p>                     |
| Column 19 lines 20-23. | Analyzing these identifier signals in a predetermined fashion, microcomputer, 205, determines that "Wall Street Week" is being televised on channel X. | Page 267 lines 20-28.               | Page 435 lines 16-25. | <p>All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.) By contrast, the...</p> <p>In due course, while scanning sequentially all channels in the fashion of example #5, the apparatus of the signal processor, 200, of the station of Fig. 7 and 7C detects one instance of the Select-WSW-Program-Unit SPAM message of the station of Fig. 6 ...</p> <p>Receiving said Select-WSW-Program-Unit message causes the apparatus of said signal processor, 200, to input said message to the microcomputer, 205, of said station.</p> |
|                        |  | Page 436 line 9 to page 437 line 3. |                       | <p>Receiving said Select-WSW-Program-Unit message causes decoder, 203, ... to input ... the information segment</p>  |

| 1981, Spec Reference | 1981 Language | 1987, Spec Reference | 1987 Language |
|----------------------|---------------|----------------------|---------------|
|----------------------|---------------|----------------------|---------------|

### Specification Correlation Chart

|                        |  |   |   |
|------------------------|--|---|---|
|                        |  |   | <p>of said message to the CPU of microcomputer, 205, and to cause said CPU to execute the information so inputted as a machine language job. The information so inputted is the aforementioned determine-whether-to-select instructions that contain said particular specific-WSW information and said please-fully-enable-WSW-on-CC13-at-particular-8:30 information.</p> <p>Executing said determine-whether-to-select instructions causes microcomputer, 205, to... Said instructions contain one instance, and ... program-unit-of-interest information that is preprogrammed at said microcomputer, 205, contains a second instance of specific-WSW information, <i>which second instance reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted.</i> Automatically, microcomputer, 205, compares said one instance to said program-unit-of-interest information and <b>determines a match</b> with said second instance.</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.</p> |
| Column 19 lines 23-24. | Then, in a predetermined fashion, microcomputer, 205, may... | Page 439 lines 14-15.<br>Page 437 lines 1-6.                        | <p>...to receive the transmission of cable channel 13;...</p> <p>Determining a match causes microcomputer, 205, automatically to input said please-fully-enable-WSW-on-CC13-at-particular- 8:30 information to the controller, 20.</p> <p>Receiving said please-fully-enable-WSW-on-CC13-at-particular-8:30 information causes controller, 20, in a predetermined fashion, to prepare particular apparatus ...</p> <p>...to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;....</p>  |
| Column 19 lines 24-25. | ...instruct tuner, 214, to switch box, 201, to channel X...  | Page 439 lines 9-15.<br>Page 295 lines 6-8.<br>Page 439 lines 9-15. | <p>Then, automatically, controller, 20, causes a selected tuner, 214, to tune to the frequency of cable channel 13, thereby causing its associated converter box, 201, to convert its...</p> <p>...to cause selected apparatus of said station--cable converter box, 201, ... to receive the transmission of cable channel 13;....</p>  |

| 1987 Specification Reference           | 1987 Language  | 1987 Specification  | 1987 Language  |
|--|--|---|--|
| <b>Specification Correlation Chart</b> |  |   |  |
| Column 19 lines 25-27.                 | ...and may instruct control system, 220, to turn video recorder, 217, on and record "Wall Street Week," ...  | Page 445 lines 24-27.<br><br>Page 446 lines 18-23.                | ...instructions causes controller, 20, ...; to switch power on to video recorder/player, 217,....<br><br>...controller, 20, ... causes recorder/player, 217, to record said information of the "Wall Street Week" program.<br><br>...instructions causes controller, 20, to switch power on to monitor, 202M, ... Automatically, controller, 20, inputs a particular instruction to decoder, 145, via said communications link, that causes decoder, 145, to switch power on to monitor, 202M,....<br><br>...and to tune monitor, 202M, in a predetermined fashion.  |
| Column 19 lines 27-28.                 | ...and also microcomputer, 205, may instruct switch, 216, to turn TV set, 202, on  | Page 445 line 24 to page 446 line 1.                              | In so doing, controller, 20, causes monitor, 202M, to receive the decrypted video and audio information of the "Wall Street Week" program, to display the video image of said information, and to emit sound in accordance with said audio,....  |
| Column 19 lines 28-29.                 | and tuner, 215, to tune appropriately to "Wall Street Week."   | Page 445 line 35 to page 446 line 1.<br><br>Page 446 lines 17-21. | <b>Controlling Computer-based Combined Media Operations</b>  |
| Column 19 line 30.                     | <b>Co-ordinating Multimedia Presentations in Time</b>  | See generally page 447 line 25 to page 457 line 10.               | Fig. 7C is a block diagram of signal processing apparatus and methods selecting receivable information and programming and controlling combined medium, multi-channel presentations.<br><br>(To accomplish all this has required only that the subscriber of microcomputer, 205, [and other subscribers at other stations] cause the installation and connection of the apparatus shown in the figures of this submission, especially Fig. 7 (and 7C); caused his microcomputer, 205, to be preprogrammed as described above; and preinformed microcomputer, 205, of his wish to view said "Wall Street Week" program by causing the aforementioned select-WSW information to be recorded at said microcomputer, 205.)<br>Then the combined medium combining process described above in "One Combined Medium" and in examples #1, #2, #3, #4, etc. commences. And the Fig. 1C combining is displayed.<br>But the combining of Fig. 1C is just part of a larger process.<br>When the "Wall Street Week" transmission begins at 8:30 |
| Column 19 lines 31-34.                 | FIG 6C can also illustrate how programming delivered at different times to one place can be co-ordinated to give a multimedia presentation at one time in one place. | Page 18 lines 24-27.<br><br>page 450 line 27 to page 451 line 11. |  |



| 1981 Spec. Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
|----------------------|---------------|---------------------|---------------|
|----------------------|---------------|---------------------|---------------|

### Specification Correlation Chart

|                        |   |   |   |
|------------------------|---|---|---|
|                        |   |   | PM on a Friday evening, the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.  |
| Column 19 lines 35-37. | Each weekday, microcomputer, 205, receives, about 4:30 PM, by means of a digital information channel, all closing stock prices applicable that day. | Page 449 lines 13-26.                             | Each weekday after 4:30 PM, a remote stock-price-data transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. (Said remote station transmits said closing stock price data and causes specific subscriber stations to select and process their specific information of interest in the fashion in which remote news-service-A station transmitted the AT&T news item and caused selected stations to select and process, in their specific fashions, the information of said item.) |
| Column 19 lines 37-39. | It may receive these directly or it may automatically query a data service for them in a predetermined fashion.                                     | Page 449 lines 26-35.                             | Alternatively, microcomputer, 205, is caused in a predetermined fashion (for example, by a SPAM message a given transmission monitored by signal processor, 200, in any of the above described fashions) automatically to telephone a remote data service computer, by means of network, 262, in a fashion well known in the art, and to cause said remote computer to select and transmit the particular closing price datum or data of the stock or stocks of the portfolio of said microcomputer, 205, thereby causing said microcomputer, 205, to record said datum or data in a predetermined fashion.   |
| Column 19 lines 39-41. | It records those prices that relate to the stocks in its stored portfolio.  | Page 449 lines 13-20.                             | Each weekday after 4:30 PM, a remote stock-price-data transmission station transmits all closing stock price data applicable that day and causes apparatus at each subscriber station, in a predetermined fashion, to select and record at the microcomputer, 205, of said station the particular closing price datum or data that apply to the particular stock or stocks of the preprogrammed portfolio of said computer. ...caused his microcomputer, 205, to be preprogrammed as described above;...  |
| Column 19 lines 42-43. | Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to...  | Page 450 lines 31-32.<br><br>Page 21 lines 20-23. | Microcomputer, 205, is preprogrammed to ... respond ... to ...  |
| Column 19 lines 43-44. | ...instruction signals embedded in the "Wall Street Week" programming transmission.   | Page 21 lines 23-24.                              | ... instruction signals embedded in the "Wall Street Week" programming transmission.  |

| 1981 Spec Reference    | 1981 Language  | 1987 Spec Reference   | 1987 Language   |
|------------------------|--|---|---|
| Column 19 lines 45-46. | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening,...   | Page 451 lines 6-7.   | When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, ...   |
| Column 19 lines 46-48. | ...several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205.  | Page 23 line 35 to page 24 line 4.<br><br>Page 37 line 26 to page 38 line 8 | Subsequently, a second series of instructions is embedded and transmitted at said program originating studio. Said second series is detected and converted into usable digital signals by decoder, 203, and inputted to microcomputer, 205, in the same fashion as the first series.<br><br>In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
| Column 19 lines 48-53. | These signals instruct microcomputer, 205, to generate several graphic video overlays, which microcomputer, 205, has the means to generate and transmit and TV set, 202, has the means to receive and display, and to transmit these overlays to TV set, 202,... | Page 24 lines 5-16.   | Microcomputer, 205, evaluates the initial signal word or words which instruct it to load at RAM (from the input buffer to which decoder, 203, inputs) and run the information of a particular set of instructions that follows said word or words just as the information of a file named FILE.EXE, recorded on the contained floppy disk, would be loaded at RAM (from the input buffer to which the disk drive of said disk inputs) and run were the command "FILE" entered from the console keyboard to the system level of the installed disk operating system. (Hereinafter, such a set of instructions that is loaded and run is called a "program instruction set."  |
|                        |  | Page 451 lines 7-11.  | ...the program instruction set in the first message of the "Wall Street Week" example instructs microcomputer, 205, to generate not one but a plurality overlays. The combining of Fig. 1C is merely the first.   |
| Column 19 line 53.     | ...upon command.   | Page 26 lines 20-28.  | (Hereinafter, an instruction such as the above signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)   |
| Column 19 line 53-56.  | Subsequently in the program, the host says, "Here is what the  | Page 25 lines 26-33.  | During this time the program may show the so-called   |

| 1981 Spec Reference                     | 1981 Language   | 1987 Spec Reference                     | 1987 Language   |
|---|---|---|---|
| <b>Specification Correlation Chart</b>  |   |   |   |
|   | Dow Jones Industrials did is the past week," and a studio generated graphic is pictured.  |   | "talking head" of the host as he describes the behavior of the stock market over the course of the week. Then the host says, "Now as we turn to the graphs, here is what the Dow Jones Industrials did in the week just past," and a studio generated graphic is transmitted. Fig. 1B shows the image of said graphic as it appears on the video screen of TV monitor, 202M.  |
| Column 19 lines 56-59.                  | The host then says, "Here is what the broader NASDAQ index did in the week past," and a studio generated graphic overlay is displayed on top of the first graphic.  | Page 451 lines 25-32.                   | For example, the Fig. 1C display of user specific overall stock portfolio performance could be followed by second and third displays that analyze portions of the subscriber's portfolio—eg., the portion invested in New York Stock Exchange listed stocks in comparison to the so-called "NYSE" index and the portion invested in so-called "over-the-counter" stocks in comparison to the so-called "NASDAQ" index.                                  |
| Column 19 lines 59-60.                  | Then the host says, "And here is what your portfolio did." At this point, an instruction signal is generated in the television studio originating the programming ... and is transmitted in the programming transmission. | Page 25 lines 33-34.                    | Then the host says, "And here is what your portfolio did."  |
| Column 19 lines 60-62.                  |   | Page 25 line 34-36.                     | At this point, an instruction signal is generated at said program originating studio, ...   |
| Column 19 lines 62-63                   |   | Page 25 line 35 to page 26 line 1.      | ... embedded in the programming transmission, and transmitted.  |
| Column 19 lines 63-64.                  | This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205.   | Page 26 lines 1-2.                      | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and ...   |
|   |   | Page 37 line 26 to page 38 line 8.      | In each decoder, the controller, 39, 44, or 47, receives detected digital information from the relevant detector or detectors, 34, 37, 38, 43, and 46. Upon receiving any given instance of signal information, controller, 39, 44, or 47, is preprogrammed ... to identify in a predetermined fashion or fashions subscriber station apparatus to which said signal information should be transferred; and to transfer said signals to said apparatus. |
| Column 19 lines 64-66.                  | This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202,...  | Page 26 lines 1-8.                      | Said signal is identified by decoder, 203; transferred to microcomputer, 205; and executed by microcomputer, 205, at the system level as the statement, "GRAPHICS ON". Said signal instructs microcomputer, 205, at the PC-MicroKey 1300 to overlay the graphic information in its graphics card onto the received composite video information and transmit the combined information to TV monitor, 202M.   |
| Column 19 lines 67 to column 20 line 2. | The viewer then sees a microcomputer generated graphic of his own stocks' performance overlay the studio generated graphic.   | Page 451 line 3.<br>Page 26 lines 8-11. | And the Fig. 1C combining is displayed.<br><br>TV monitor, 202M, then displays the image shown in Fig. 1C which is the microcomputer generated graphic of the   |

|  |               |                     |  |
|--|---------------|---------------------|--|
| 1981 Spec Reference                    | 1981 Language | 1987 Spec Reference | 1987 Language  |
| <b>Specification Correlation Chart</b> |               |                     |  |
|  |               |                     | subscriber's own portfolio performance overlaid on the studio generated graphic. |

# XXI. COLUMN 21

| Column 21 lines 1-2.  | Using Signaling and Decryption Techniques to Control Distribution of Copyrighted Materials   | See generally page 278 line 22 to page 312 line 30. Especially, page 312 lines 12-28.<br><br>See generally page 427 line 8 to page 447 line 23.<br><br>See generally page 533 line 23 to page 556 line 32. Especially, page 548 line 1 to page 549 lines 31. | Regulating the Reception and Use of Programming   |
|-----------------------|--|--|---|
| Column 21 lines 3-8.  | FIG 6E illustrates a signaling and decryption technique which could serve to facilitate the electronic distribution of copyrighted materials such as books and movies by tending to discourage piracy and the unauthorized retransmission of copies, whether they be properly acquired or pirated.   | Generally, page 312 lines 12-20.<br><br>Page 306 lines 20-25.  | And for example, the transmitted programming may be only audio (for example, of a radio transmission) or print (for example, of broadcast print) rather than television. And for example, the output apparatus may be speakers or one or more printers rather than a television monitor. And for example, rather than being a transmitter at a remote wireless or cable transmission station, the source of the transmission may be a local apparatus such as a video (or audio or digital information) tape recorder or a laser disc player, ....<br><br>(By causing information that identifies the station at which encrypted information is decrypted to be so inserted, the present invention makes it possible to identify particular stations where their information is misused--for example, if pirated decrypted copies of information are distributed, the station at which decryption occurred can be identified....<br>...Each farmer's laser disc player, 232, is loaded with a so-call "optical disk" on which is recorded a file named "PROPRIET MOD" that contains encrypted information of a proprietary software module. |
| Column 21 lines 9-19. | FIG 6E could be any home or commercial establishment but is described here as a book store. Using conventional laser videodisc equipment and techniques, well known in the art, a publisher has put his full line of books on laser discs in encrypted form and distributed one copy of each disc to each of his authorized book store retail outlets. He has also | Page 534 lines 13-16.<br><br>Page 548 lines 24-30.   | Automatically, under control of its specific received program   |

| 1981 Spec Reference                    | 1981 Language  | 1987 Spec Reference  | 1987 Language  |
|--|--|--|--|
| <b>Specification Correlation Chart</b> |  |  |  |
|  | distributed to each a conventional computer floppy disk for use on conventional microcomputer, 205, that can operate conventional laser videodisc system, 232, in a predetermined fashion to locate and transmit individual titles in his line.  |  | instruction set, each microcomputer, 205, accesses the file, MY_FARM.DAT, that is prerecorded on the disk loaded at its A: disk drive and also accesses the encrypted "PROPRIET.MOD" file that is prerecorded at the laser disc player, 232, of each farmer's station....  |
| Column 21 lines 20-24.                 | A customer comes into the book store and asks to buy a title, hypothetically, <i>How to Grow Grass</i> . The salesman asks the customer for suitable identification, types into micro-computer, 205, the customer's name and address and that he wishes to purchase <i>How to Grow Grass</i> . | Page 548 lines 1-4.  | Receiving the particular first SPAM message of its local intermediate station causes apparatus of the subscriber station of each farmer to execute the contained program instruction set of said message at the microcomputer, 205,....  |
| Column 21 lines 25-26.                 | Microcomputer, 205, may check to determine that the customer has no record as a pirate...  | Page 549 line 19-21<br><br>Page 16 lines 24-26.<br><br>Page 293 lines 24-35. | Then, in the fashion of example #7, apparatus of each station are caused to decrypt and retain meter information of the decryption of the encrypted information of said file.<br><br>Flexibility must exist for varying techniques that restrict programming to duly authorized subscribers in order to identify and deter pirates....<br><br>A match indicates that said sixteen contiguous bit locations that hold preprogrammed SPAM operating information are preprogrammed with properly. A match occurs at the station of Fig 4.<br>(Simultaneously other stations compare information of other selected information of bit locations that contain information of said enable-CC13 instructions with information of other local bit locations that hold preprogrammed SPAM operating information. At each station where a match fails to occur--which suggests that the preprogrammed SPAM operating information of said station has been tampered with in an unauthorized fashion--....<br>...each microcomputer, 205, accesses the file, MY_FARM.DAT, that is prerecorded on the disk loaded at its A: disk drive and also accesses the encrypted "PROPRIET.MOD" file that is prerecorded at the laser disc player, 232, of each farmer's station... |
| Column 21 lines 26-30.                 | ...then transfers his name and address to buffer/comparator, 8 (referring to Fig. 1), of signal processor, 200, and instructs laser videodisc system, 232, to transmit its encrypted copy of <i>How to Grow Grass</i> to printer or other means, 221,...                                       | Page 548 lines 25-30.  | Then, in the fashion of example #7, apparatus of each station are caused to decrypt and retain meter information of the decryption of the encrypted information of said file.  |
| Column 21 lines 30-32.                 | ... via decryptors, 224 and 231. Laser system, 232, transmits one copy of the encrypted title to decryptor, 224, ...   | Page 549 line 19-21.<br><br>Page 299 lines 19-22.                            | Automatically, controller, 20, causes matrix switch, 258, to transfer the information of the aforementioned video output inputted from said tuner, 215, to the output that outputs to  |

**Specification Correlation Chart**

|                        |  |                                      |   |
|------------------------|--|--------------------------------------|---|
| Column 21 lines 32-34  | ...and one to signal processor, 200, for processing and evaluation.  | Page 297 lines 20-33.                | <p>decryptor, 224, thereby causing said decryptor, 224,....</p> <p>Subsequently, but still in the interval between said commence-enabling time and said 8:30 PM time, said program originating studio embeds in the audio portion and transmits a particular SPAM message that consists of a "01" header, execution segment information that matches said enable-WSW - programming information, particular meter-monitor information, particular</p> <p>1st-stage-enable-WSW-program instructions as the information segment information, and an end of file signal. (Hereinafter said message is called the</p> <p>"1st-WSW-program-enabling-message (#7).")</p> <p>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at the digital detector, 38, of decoder, 30, to detect the information of said message and at the control processor, 39J, to determine that said selected information matches the aforementioned instance of enable-WSW-programming information at said particular controlled-function-invoking information location. So determining a match causes said control processor, 39J, to execute the aforementioned transfer-this- message-to-controller-20 instructions.</p> <p>Each farmer has a subscriber station that is identical to the station of Fig. 7 except that each station has two television recorder/players that are recorder/players, 217 and 217A; two television tuners, 215 and 215A; and a laser disk player, 232. Particular farm information of the specific farm of each farmer is recorded in a file named MY_FARM.DAT on a disk at the A: disk drive of the microcomputer, 205, of each station.</p> |
| Column 21 lines 35-36. | In the encrypted title, signal processor, 200, identifies one or more signal words.                                    | Page 297 line 30 to page 298 line 5. | <p>In the fashions described above, so transmitting said SPAM message causes signal processor, 200, at the digital detector, 38, of decoder, 30, to detect the information of said message and at the control processor, 39J, to select the information of the execution segment in said message and determine that said selected information matches the aforementioned instance of enable-WSW-programming information at said particular controlled-function-invoking information location. So determining a match causes said control processor, 39J, to execute the aforementioned transfer-this- message-to-controller-20 instructions.</p>  |
| Column 21 lines 36-38. | If signal processor, 200, has the customer's name and address and the bookstore is a retail outlet in good standing... | Page 534 lines 1-8.                  | <p>Each farmer has a subscriber station that is identical to the station of Fig. 7 except that each station has two television recorder/players that are recorder/players, 217 and 217A; two television tuners, 215 and 215A; and a laser disk player, 232. Particular farm information of the specific farm of each farmer is recorded in a file named MY_FARM.DAT on a disk at the A: disk drive of the microcomputer, 205, of each station.</p>  |
| Column 21 lines 38-40. | ...that has received from a remote site program information on the predetermined fashions in affect,...                | Page 298 lines 10-21.                | <p>Receiving the "1st-WSW-program-enabling-message (#7) causes controller, 20, to execute the aforementioned load-and-run-@20 instructions, to load the</p> <p>1st-stage-enable-WSW- program instructions of the information segment at particular RAM of controller, 20, then to execute the information so loaded as the so-called machine language instructions of one so-called job.</p>  |

| 1981 Spec Reference                    | 1981 Language  | 1987 Spec Reference   | 1987 Language  |
|--|--|---|--|
| <b>Specification Correlation Chart</b> |  |   |  |
|  |  |   | Executing said 1st-stage-enable-WSW-program instructions causes controller, 20, in the predetermined fashion of said instructions, to affect a first stage of decrypting the video information of the "Wall Street Week" program transmission.   |
| Column 21 lines 40-43.                 | ...signal processor, 200, decrypts the signal word or words and transfers them to decryptor, 224, to serve as the code for the first stage of decryption.  | Page 299 lines 13-22.   | Automatically, controller, 20, transfers said decryption cipher key Ba information to a selected decryptor, 224, and causes decryptor, 224, to commence decrypting any received information, using said key information and selected decryption cipher algorithm B, and outputting decrypted information to matrix switch, 258. Automatically, controller, 20, causes matrix switch, 258, to transfer the information of the aforementioned video output inputted from said tuner, 215, to the output that outputs to decryptor, 224....   |
| Column 21 lines 44-45.                 | Decryptor, 224, then decrypts a part of the encrypted transmission...  | Page 299 lines 22-27.   | ...thereby causing said decryptor, 224, to receive the information of said video portion (said information being, as explained above, encrypted digital video), to decrypt said information, and to transfer decrypted information of said video portion to matrix switch, 258.  |
| Column 21 lines 45-46.                 | ...and passes the partly decrypted transmission to signal stripper, 229, and signal generator, 230.  | Page 305 lines 22-32.   | ...to commence transferring the information inputted from said converter box, 201, to the output that outputs to television tuner, 215; to commence transferring the information inputted from decryptor, 224, to the output that outputs to signal stripper, 229; to commence transferring the information inputted from signal stripper, 229, to the output that outputs to signal generator, 230; to commence transferring the information inputted from signal generator, 230, to the output that outputs to decryptor, 231; and to commence transferring the information inputted from decryptor, 231....                     |
| Column 21 lines 46-51.                 | In the decrypted portion of the partially decrypted transmission, signal processor, 200, identifies a second signal word or set of words which it decrypts in a predetermined fashion and passes to decryptor, 231, to serve as the code basis for the second stage of decryption. | Page 304 lines 10-11.<br><br>Page 304 line 23 to page 307 line 8. | (Hereinafter, each of said SPAM messages is called a "2nd-WSW-program-enabling-message (#7).")<br><br>Automatically, decryptor, 39K, decrypts the encrypted information of said message and transfers said message to EOFs valve, 39H. Automatically, EOFs valve, 39H, inputs the information of said message, unencrypted, to controller, 39J, until the end of file signal of said message is detected. Automatically, control processor, 39J, determines that the unencrypted information of the execution segment of said message matches the aforementioned instance of enable-WSW-programming information at said particular |

**Specification Correlation Chart**

|                        |   |  | controlled-function-invoking information location and executes the aforementioned transfer-this-message-to-controller-20 instructions.<br>Executing said instructions causes the transfer of the remove.) Automatically, controller, 20, selects information of the aforementioned first three of the last four significant digits of the binary information of the aforementioned unique digital code at ROM, 21 and computes a particular Q quantity according to a particular formula that is preprogrammed in said 2nd-stage-enable-WSW-program instructions. ... The information of said Q quantity is the decryption key Aa.  |
|------------------------|---|--|---|
| Column 21 lines 51-53. | Signal processor, 200, also may instruct signal stripper, 229, to remove this second signal word or words.  | Page 305 line 34 to page 306 line 4.   | Automatically, controller, 20, causes signal stripper, 229, to strip information, in a fashion well known in the art, from a particular strip-designated portion of the video transmission received at said stripper, 229, and transfer the received video, without said stripped information, to matrix switch, 258.   |
| Column 21 lines 53-63. | Signal processor, 200, also passes the customer's name and address and its own unique apparatus identifier code from read only memory, 21, to signal generator, 230, which generates a signal embedding the customer's name and address and the retail outlet's identification in the programming in a suitable place or places in a suitable fashion. (Signal processor, 200, may also transmit the customer's name and address to printer or other means, 221, for actual printing of the customer's name and address in the text.)<br>The transmission then passes through decryptor, 231, which completes the decryption process... | Page 306 lines 11-19.                  | Automatically, controller, 20, selects complete information of the aforementioned unique digital code at ROM, 21, transmits said complete information to signal generator, 230, and causes said generator, 230, to insert said complete information, in a predetermined periodic fashion and in an inserting fashion well known in the art, into a particular insertion-designated portion of the video transmission received at said generator, 230, and to transfer the received video, with said inserted information, to matrix switch, 258.<br>...to commence transferring the information inputted from signal generator, 230, to the output that outputs to decryptor, 231;... |
| Column 21 lines 63-65. |   | Page 305 lines 29-31, and lines 14-16. | ...and to affect a second and last stage of decrypting the digital video information of the "Wall Street Week" program transmission.  |
| Column 21 lines 65-66. | ...and passes the decrypted programming transmission to printer or other means, 221,...   | Page 309 line 27 to page 310 line 3.   | Determining that signal stripper, 229, and that signal generator, 230, are stripping and inserting correctly (after having determined that that decryptors, 224 and 231, are decrypting correctly) causes the controller, 20, of the station of Fig. 4 (and causes controllers, 20, at other stations where so determining occurs) to execute particular additional 2nd-stage-enable-WSW-program instructions, and executing said instructions causes controller, 20, to cause the apparatus of the station of Fig. 4 to commence transferring the  |



| 1981 Spec Reference | 1981 Language | 1987 Spec Reference | 1987 Language |
|---------------------|---------------|---------------------|---------------|
|---------------------|---------------|---------------------|---------------|

**Specification Correlation Chart**

|  |   |                       |  |
|--|---|-----------------------|--|
|  |   |                       | decrypted ... information ... to microcomputer, 205, ....  |
| Column 21 lines 66-67.                 | ...and also to signal processor, 200.   | Page 312 lines 12-14. | And for example, the transmitted programming may be only audio (for example, of a radio transmission) or print (for example, of broadcast print) rather than television.   |
| Column 21 line 67 to column 22 line 2. | Signal processor, 200, receives and analyzes the signal content of the programming output of decrypter, 231 to ensure that stripper, 229, and and generator, 230, have functioned properly. | Page 305 lines 31-34. | ...and to commence transferring the information inputted from decryptor, 231, to the output that outputs to said third alternate contact of switch, 1.   |
|  |   | Page 308 lines 13-30. | Receiving said signal causes controller, 20, under control of said 2nd-stage-enable-WSW-program instructions, to cause said control processor, 391, to transfer to controller, 20, selected information of said check sequence; to compare said selected information to selected information of said 2nd-stage-enable-WSW-program instructions; and to determine that a match results, indicating that decryptors, 224 and 231, are decrypting received information correctly. Determining a match causes controller, 20, to determine, in a predetermined fashion, that signal stripper, 229, is correctly stripping information from the aforementioned strip-designated portion of the video transmission and transferring received video with said inserted information. |

**XXII. COLUMN 22**

|                      |  |                                       |  |
|----------------------|--|---------------------------------------|--|
| Column 22 lines 2-4. | If they have not, signal processor, 200, shuts down the decryption of the title and prevents its delivery to the customer. | Page 308 line 31 to page 309 line 11. | (Simultaneously other stations compare selected information of said check sequence to selected informations of said 2nd-stage-enable-WSW-program instructions and verify the correct functioning of local signal strippers, 229, and generators, 230. At each station where a controller, 20, determines that a match does not result--which indicates that a decryptor, 224 or 231, is not decrypting its received information correctly and suggests that the preprogrammed SPAM operating information of said station may have been tampered with--or determines that a stripper, 229, or a generator, 230, fails to function correctly, so determining match causes said controller, 20, to cause all information of |
|----------------------|--|---------------------------------------|--|

| 1981 Spec Reference                    | 1981 Language   | 1987 Spec Reference  | 1987 Language  |
|--|---|--|--|
| <b>Specification Correlation Chart</b> |   |  |  |
| Column 22 line 5                       | <b>The General Case</b>   |  | said 2nd-WSW-program-enabling-message (#7) to be erased from all memory of said station except for a particular portion of said 2nd-stage-enable-WSW-program instructions loaded at the RAM of said controller, 20,....<br><b>A Summary Example #11 ... and the General Case</b>   |
| Column 22 lines 6-15.                  | It is obvious to one of ordinary skill in the art that the foregoing is presented by way of example only and that the invention is not to be unduly restricted thereby since modifications may be made in the structure of the various parts without functionally departing from the spirit of the invention. FIG 6 should make this clear. The receiver site depicted in FIG 6 has multiple means for receiving programming transmissions. All received programing is analyzed and evaluated by signal processor, 200. | See generally page 533 line 23 to page 557 line 32.<br>Page 556 line 33 to page 557 line 32. | It is obvious to one of ordinary skill in the art that the foregoing is presented by way of example only and that the invention is not to be unduly restricted thereby since modifications may be made in the structure of the various parts or in the methods of their functioning without functionally departing from the spirit of the invention. Any SPAM message and any other programming transmission can be caused, through encryption/decryption and other SPAM regulating techniques of the present invention, to take affect fully only selected stations and station apparatus. Because any transmission station can invoke any SPAM controlled function by transmitting a SPAM message with meter-monitor segment information, invoking any given SPAM controlled function can also cause meter information and or monitor information to be processed in the fashions described above at apparatus and stations where said controlled function is invoked. Intermediate transmission stations can be equipped with SPAM regulating capacity such as that illustrated in Fig. 4, monitoring capacity such as that illustrated in Fig. 5, and control information switching and bus communications capacity such as that illustrated in Figs. 7 and 8. Controlling such capacity by means of transmitted SPAM messages, a remote network origination and control station can transmit programming to intermediate transmission stations, regulate and meter the use of said programming at said stations, monitor the use and usage of said programming at said stations, and control communication of control information at said stations all in the fashions that apply above to ultimate receiver stations. And any given transmission station can cause its receiver stations to function automatically not only in the fashions described above in the sections on automating ultimate receiver stations but in any appropriate fashion that a network origination and control station can cause intermediate transmission stations to function automatically. |

| 1981 Spec Reference    | 1981 Language   | 1987 Spec Reference                   | 1987 Language   | Specification Correlation Chart   |
|------------------------|---|---------------------------------------|---|---|
| Column 22 lines 15-20. | Working with microcomputer, 205, which is preprogrammed to present received programming in predetermined fashions determined at the receiver site, signal processor, 200, permits and facilitates such presentations in accordance with the intentions of the suppliers of the programming at remote sites. | Page 428 line 21 to page 429 line 17. | The program-unit-of-interest information preprogrammed at the microcomputer, 205, of the station of Figs. 7 and 7C includes particular specific-WSW information that reflects the wish of the subscriber of said station to view (or record) said "Wall Street Week" program when said program is transmitted. In a predetermined fashion, said subscriber has caused to be included in said program-unit-of-interest information. (Microcomputers, 205, of selected other stations of said large plurality of stations are also so preprogrammed.) The station-specific-television-program-selection-and-display instructions at the microcomputer, 205, of the station of Figs. 7 and 7C includes particular information that said subscriber will pay up to a certain limit--for example, twenty-five cents--to be permitted to receive said program and that, if the TV set, 202, of said station is switched off when information of the transmission of said program is detected, power should be switched on to said TV set, 202, and said program should be displayed at the monitor, 202M, of said set and, in addition, power should be switched on to the video recorder/player, 217, of said station, and said program should be recorded at said recorder/player, 217. | The signal processor, 200, of said station scans sequentially all received television transmission channels in the fashion described above and is preprogrammed at the RAM associated with the control processor, 39J, of its decoder, 30, to respond in a particular controlled function fashion whenever a SPAM message with an execution segment of particular available-television-program information is detected. Said signal processor, 200, has capacity for actuating and tuning TV set, 202, and video recorder, 217, and for controlling microcomputer, 205. |
| Column 22 lines 20-24. | Working together, signal processor, 200, and microcomputer, 205, can control all local equipment and manage local presentations in any fashion feasible given the nature of the local equipment and the programming.  | Page 444 line 31 to page 445 line 22. | Automatically, controller, 20, transmits particular information to said decoder, 145, that causes said decoder, 145, to determine, in a predetermined fashion, that power is not on to monitor, 202M, and to respond by transmitting particular 202M-is-not-on information to controller, 20, via said link.  | The fact that monitor, 202M, is not on signifies that the subscriber of the station of Fig. 7 is not viewing television information at monitor, 202M, and suggests that said subscriber may not even be present at said station.  |

**Specification Correlation Chart**

|  |  |  |  |
|--|--|--|--|
|  |  |  | <p>Receiving said 202M-is-not-on information causes ..<br/> controller, 20, under control of said additional 2nd-stage-<br/> enable-WSW-program instructions, to cause microcomputer,<br/> 205, to input particular preprogrammed instructions to said<br/> controller, 20, which instructions reflect the the specific<br/> fashion in which said subscribe wants any given selected<br/> program to be selected and displayed. Automatically,<br/> controller, 20, inputs a particular choose-mode-of-selection-<br/> and-display instruction and said 202M-is-not-on information<br/> to microcomputer, 205, and receiving said instruction and<br/> said information causes microcomputer, 205, in a<br/> predetermined fashion, to process the aforementioned<br/> station- specific-television-program-selection-and-display<br/> instructions. Automatically, under control of said<br/> instructions, microcomputer, 205, inputs to controller, 20,<br/> particular preprogrammed<br/> display-at-202M-and-record-at-217 instructions.</p> |
|--|--|--|--|

**APPENDIX D**

**GLOSSARY OF DEFINED TERMS  
TO THE 1987 PRIORITY INSTANT SPECIFICATION**

## GLOSSARY OF DEFINED TERMS

### 1987 Priority U.S. Patent Application

The following terms are defined and used in specific ways in U.S. Patent No. 4,965,825 and its continuations, including Applicants' instant specification. Terms that appear at the left margin in quotation marks are formally defined in the patent disclosures. The meanings of terms that are shown below without quotation marks are made clear in the context in which they appear.

#### A

#### B

"broadcast" ... page 12 line 22 ... to transmit programming over-the-air.

"broadcast print" ... page 1 line 25 ... Radio and electronic print services such as stock brokers' so-called "tickers" and "broad tapes" are ... powerful, user friendly mass media. (Hereinafter, the electronic print mass medium is called, "broadcast print.")

#### C

cadence information ... page 60 line 12 ... Cadence information which consists of headers, certain length tokens, and signals that are called "end of file signals" enables subscriber station apparatus to distinguish each instance of header information in any given message stream and, hence, to distinguish the individual messages of said stream. In the present invention, subscriber station apparatus are preprogrammed to process cadence information.

"cablecast" ... page 12 line 23 ... to transmit programming over hard-wire.

"combined" media ... page 2 line 17 ... Today great potential exists for combining the capacity of broadcast communications media to convey ideas with the capacity of computers to process and output user specific information. One such combination would provide a new radio-based or broadcast print medium with the capacity for conveying general information to large audiences--e.g., "Stock prices rose today in heavy trading,"--with information of specific relevance to each particular user in the audience--e.g., "but the value of your stock portfolio went down." (Hereinafter, the new media that result from such combinations are called "combined" media.)

"combining synch command" ... page 26 line 20 ... (Hereinafter, an instruction such as the above

signal of "GRAPHICS ON" that causes subscriber station apparatus to execute a combining operation in synchronization is called a "combining synch command." Said initial signal word or words that preceded the above program instruction set provide another example of a combining synch command in that said word or words synchronized all subscriber station computers in commencing loading and running information for a particular combining.)

command ... page 44 line 12 ... As Fig. 2E shows, [a] header and execution and meter-monitor segments constitute [one form of] a command.

A command is an instance of signal information that is addressed to particular subscriber station apparatus and that causes said apparatus to perform a particular function or functions.

A command is always constituted of at least a header and an execution segment. With respect to any given command, its execution segment contains information that specifies the apparatus that said command addresses and specifies a particular function or functions that said command causes said apparatus to perform. (Hereinafter, functions that execution segment information causes subscriber station apparatus to perform are called "controlled functions.")

Commands often contain meter-monitor segments. ...

...

... page 47 line 11 ... Commands can address many apparatus and execute many controlled functions.

"control invoking instructions" ... page 23 line 24 ... see "invoking broadcast control"

"controlled functions" ... page 44 line 22 ... (Hereinafter, functions that execution segment information causes subscriber station apparatus to perform are called "controlled functions.")

...

... page 46 line 8 ... Examples of controlled functions include:

Load and run the contents of the information segment.

Decrypt the execution segment using decryption key G.

Decrypt the execution and meter-monitor segments using decryption key J.

Commence the video overlay combining designated in the meter-monitor segment.

Modify the execution segment to instruct URS microcomputer, 205, to commence overlay designated in meter-monitor segment, record the contents of the execution and meter-monitor segments, and transfer command to URS microcomputer, 205.

Print the contents of the information segment.

Record the contents of the execution and meter-monitor segments; transfer them to URS decryptors, 224, and execute the preprogrammed instructions that cause URS decryptors, 224, to commence decrypting with said contents as decryption key; execute preprogrammed instructions that cause URS cable converter boxes, 222, to switch to cable channel Z; execute preprogrammed instructions that cause URS matrix switches, 258, to configure its switches to transfer the input from converter boxes, 222, to decryptors, 224, and the output from decryptors, 224, to microcomputers, 205; modify the execution segment to instruct URS microcomputers, 205, to commence loading and executing the information received from URS decryptors, 224 via URS switches, 258.

"controller, 39" ... page 156 line 26 ... More precisely, controller, 39, of decoder, 203, and SPAM-controller, 205C, are one and the same (and are called, hereinafter, "controller, 39"). Thus the preferred embodiment of controller, 39, is configured and preprogrammed not only to control the detecting, correcting, converting, and executing of controlled functions at decoder, 203, but also to input to and execute at microcomputer, 205, the information of any given detected SPAM message that is addressed to URS microcomputers, 205.

"covert control" ... page 218 line 6 ... By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called "covert control.")

"covert control-invoking value" ... page 285 line 7 ... (Hereinafter, the normal binary value of a given instance of information that invokes a preprogrammed function--such as, for example, the "100110" that is the normal value of said execute-conditional-overlay-at-205 information--is called a "standard control-invoking value", and a value that temporary replaces a standard control-invoking value in the course a covert control application-- such as "111111" in example #6--is called a "covert control-invoking value".)

"CPU" ... page 22 line 33 ... central processor unit ... also defined at page 87 line 21 as ... central processor unit

## D

"data module set" ... page 365 line 24 ... (Hereinafter, a data module that is transmitted to subscriber stations and processed by computers of said stations under control of instructions of a



program instruction set is called a "data module set,"  
"data module set of Q" ... page 366 line 18 ... (Hereinafter, the data module set generated in example #9, under control of said intermediate generation set of Q, is called the "data module set of Q".)  
"data module set of Q.1" ... page 378 line 31 ... (Hereinafter, the data module set generated at the station of Fig. 6 in example #10 is called the "data module set of Q.1", signifying that said set is one version of complete data module set information of said instance of the network transmission of Q.)  
"data module set of Q.2" ... page 380 line 33 ... [Hereinafter, the data module set generated at said second station is called the "data module set of Q.2", signifying that said set is a second version of complete data module set information of said instance of the network transmission of Q.])

## E

end of file signals ... page 62 line 26 ... distinctive end of file signals are required to communicate the locations of the ends of information segments to subscriber station apparatus. In the present invention, each end of file signal is transmitted immediately after the end of an information segment; said signal is part of the information of the message in which said segment occurs; and said signal is located at the end of said message.

At any given time, subscriber station apparatus are preprogrammed to process only one distinct signal as an end of file signal. In order for said apparatus to distinguish an instance of said signal from all other signal information, an end of file signal must differ distinctly from all other information. Signal information, especially information transmitted in an information segment, can vary greatly in composition. Accordingly, to be distinctive, an end of file signal must be long and complex to detect.

An end of file signal consists of a particular sequence of bits of binary information. In the preferred embodiment each bit is identical to every other bit; that is, disregarding error correction information, an end of file signal consists of a sequence of "1" bits (eg. "11111111") or "0" bits (eg. "00000000"). In the preferred embodiment, end of file signals are composed of "1" bits rather than "0" bits.

see EOFS, EOFS bit and MOVE bit

EOFS ... refers to End Of File Signal ... see end of file signals

"EOFS bit" ... page 64 line 1 ... An end of file signal consists of a particular sequence of bits of binary information. In the preferred embodiment each bit is identical to every other bit; that is, disregarding error correction information, an end of file signal consists of a sequence of "1" bits (eg. "11111111") or "0" bits (eg. "00000000"). In the preferred embodiment, end of file signals are composed of "1" bits rather than "0" bits. Zero is a value that occurs frequently in data and in mathematics, and however many bits may occur in a binary data word that consists of a series of "0" bits, the numeric value of said word remains zero.

Numeric values that are represented in binary form by a sequence of "1" bits, especially a sequence that is long, occur in data and mathematics far less frequently than zero. Thus the preferred composition bit is "1" because the chance of data being joined in a given signal in such a way that two or more instance of information combine inadvertently and create the appearance of an end of file signal is far smaller if the preferred bit is "1" than if it is "0". (Hereinafter, the preferred binary end of file signal composition bit, "1", is called an "EOFS bit," and for reasons that are explained below, the alternate binary bit, "0", is called a "MOVE bit.")

"EOFS Complete Flag" ... page 69 line 10 ... see EOFS valve components

"EOFS Empty Flag" ... page 69 line 10 ... see EOFS valve components

"EOFS Standard Length Location" ... page 69 line 10 ... see EOFS valve components

"EOFS Standard Word Location" ... page 69 line 10 ... see EOFS valve components

"EOFS valve" ... page 65 line 19 ... an apparatus, called an "EOFS valve," that detects end of file signals

EOFS valve components ... page 69 line 10 ... In the present invention, any microprocessor, buffer/comparator, or buffer can be adapted and preprogrammed to detect end of file signals. At any given SPAM apparatus that is so adapted and preprogrammed, particular dedicated capacity exists for said detecting. Said capacity includes standard register memory or RAM capacity, well known in the art, including three particular memory locations for comparison purposes, one particular memory location to serve as a counter, and three so-called "flag bit" locations to hold particular true/false information. (Hereinafter, said three particular memory locations, said one particular memory location, and said three flag bit locations are called the "EOFS Word Evaluation Location," "EOFS Standard Word Location," and "EOFS Standard Length Location"; the "EOFS WORD Counter"; and the "EOFS WORD Flag," "EOFS Empty Flag," and "EOFS Complete Flag" all respectively.)

"EOFS WORD" ... page 70 line 12 ... (Hereinafter, one signal word of EOFS bits is called an "EOFS WORD.")

"EOFS WORD Counter" ... page 69 line 10 ... see EOFS valve components

"EOFS Word Evaluation Location" ... page 69 line 10 ... see EOFS valve components

"EOFS WORD Flag" ... page 69 line 10 ... see EOFS valve components

"EPROM" ... page 33 line 17 ... erasable programmable ROM [or other forms of programmable nonvolatile memory]

execution segment ... page 45 line 22 ... Execution segment information includes the subscriber station apparatus that the command of said segment addresses and the controlled functions said apparatus is to perform. ("ITS" refers, hereinafter, to intermediate transmission station apparatus, and "URS" refers to ultimate receiver station apparatus.) [Some] examples of addressed apparatus include:

ITS signal processors (in 71 in Fig. 6),  
ITS controller/computers (73 in Fig. 6),  
URS signal processors (200 in Fig. 7),  
URS microcomputers (205 in Fig. 7),  
URS printers (221 in Fig. 7), and  
URS utilities meters (262 in Fig. 7).

... page 47 line 16 ... Execution segment information operates by invoking preprogrammed operating instructions that exist at each subscriber station apparatus that is addressed. ... [see controlled function]

For each appropriate addressed apparatus and controlled function combination a unique execution segment binary information value is assigned. ...

For any given command, the execution segment information of said command invokes, at each relevant subscriber station apparatus, the preprogrammed operating instructions uniquely associated with its particular binary value in particular comparing and matching fashions that are described [extensively.]

The determination of appropriate addressed apparatus and controlled function combinations takes into account the facts that different apparatus, at any given subscriber station, can be preprogrammed to interpret any given instance of execution segment information differently and that subscriber station apparatus can be preprogrammed to automatically alter execution segment information. ...

...

... page 49 line 16 ... In the preferred embodiment, at any given time the number of binary information bits in any given instance of execution segment information is a particular constant number. [see "X."]

## F

"field" ... page 50 line 28 ... see "meter-monitor field."

first combining synch command ... page 89 line 8 ... Each example focuses on the processing of the three signal messages of the Fig. 1C combining. The information of said messages include three combining synch commands and one program instruction set.

The first message is of the information associated with the first combining synch

command. [See page 23 line 35 through page 24 line 16 of the specification as well as "combining synch command" above.] Said first command has a "01" header, an execution segment, and a meter-monitor segment of six fields. Said command is followed by an information segment that contains said program instruction set, and said information segment is followed by an end of file signal. Said first command addresses URS microcomputers, 205, and causes said computers, 205, to load and run the program instruction set transmitted in the information segment. Each meter-monitor segment field of said command contains information that identifies one of the following:

- . the origin of said "Wall Street Week" transmission,
- . the subject matter of said "Wall Street Week" program,
- . the program unit of said program,
- . the day of said transmission within a particular one hundred year period,
- . the supplier of the program instruction set in the information segment following said first combining synch command, and
- . the format of said meter-monitor segment information.

## G

"guide commands ... page 267 line 26 ... All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.) By contrast, the 1st-, 2nd-, and 3rd-old-program-message (#5) messages, the 2nd-new-program-message (#5), and the 1st-old-radio-program- message (#5) inform no station control apparatus of new programming transmissions because said commands are addressed to no apparatus; the execution segment of each is the aforementioned pseudo-command. (Hereinafter, each said signal is called a "transparent command" because no subscriber station control apparatus "sees" said signal.)

## H

"H" ... page 95 line 30 ... a particular preprogrammed constant number of the first converted bits of said binary information. Said constant number is the number of bits in a SPAM command header. (Hereinafter, said constant number is called "H".)

"H+X" ... page 127 line 13 ... At any given time, any given instance of "10" header message command information is of one constant binary length--the aforementioned header+exec constant length. (Hereinafter, said length is called "H+X" and is the sum of H plus X.)

"H+X+L" ... page 110 line 16 ... a particular preprogrammed constant number that is the sum of H plus X plus L to the x-bits information at said SPAM-length-info memory; (Hereinafter, said constant is called "H+X+L".)

header ... page 45 line 4 ... In simple preferred embodiments, at any given time the number of binary information bits in any given instance of header information is a particular constant number. In other words, every header contains the same number of bits. In the simplest preferred embodiment, said constant number is two, all headers consist of two bits binary information, and commands are identified by one of three binary headers:

10 - a command with an execution segment alone;

00 - a command with execution and meter-monitor segments; and

01 - a command with execution and meter-monitor segments that is followed by an information segment.

... page 54 line 12 ... In the simplest preferred embodiment, a fourth type of header is:

11 - an additional information segment transmission following a "01" header command and one or more information segments which additional segment is addressed to the same apparatus and invokes the same controlled functions as said "01" command.

## I

information segment ... page 53 line 33 ... Information segments follow commands and can be of any length. Program instruction sets, intermediate generation sets, other computer program information, and data (all of which are organized in a fashion or fashions well known in the art) are transmitted in information segments. An information segment can transmit any information that a processor can process. It can transmit compiled machine language code or assembly language code or higher level language programs, all of which are well known in the art. Commands can execute such program information and cause compiling prior to execution.

"intermediate generation sets" ... page 42 line 8 ... (Hereinafter, instances of computer program information that cause intermediate transmission station apparatus to generate program instruction set information and/or command information are called "intermediate generation sets.") ... see also "program instruction set" ... "intermediate generation set" is also defined at page 356 line 13 as ... (Hereinafter, an instance of computer program instructions that cause a computer, at an intermediate transmission station, to generate information of a program instruction set is called an "intermediate generation set.")

"intermediate generation set of Q" ... page 359 line 9 ... (Hereinafter, the intermediate generation set that causes any given intermediate transmission station to generate a program instruction set of an instance of the transmission of the programming of program unit Q is called the "intermediate generation set of Q".)

"intermediate transmission stations" ... page 40 line 33 ... (Hereinafter, ... stations that receive and retransmit broadcast transmissions are called "intermediate transmission stations", ...

"interval," as in "interval Q" of unit Q ... page 355 line 26 ... When the aforementioned remote distribution station inputs information to computer, 73, via network, 98, regarding unit Q, said distribution station inputs information that Q is particular combined medium programming and instructs computer, 73, to commence particular program instruction set generation in a particular fashion at a particular time interval prior to the scheduled playing of Q. (Hereinafter, a particular instance of such a time period is called "interval," as in "interval Q" of unit Q.)

"invoking broadcast control" ... page 23 line 25 ... Operating in said preprogrammed fashion under control of said first set of instructions, microcomputer, 205, reaches a stage at which the subscriber can input information only under control of signals embedded in the broadcast transmission and can reassume control of microcomputer, 205, ... only by executing a system reset (or so-called "warm boot") which on an IBM PC is accomplished by ... (Hereinafter, this first set of instructions is called the "control invoking instructions," and the associated steps are called "invoking broadcast control.")

"ITS" ... page 45 line 25 ... refers to intermediate transmission station apparatus.

J

K

L

"L" ... page 103 line 4 ... a third preprogrammed constant number of next bits and record said bits at particular memory. Said third constant number is the particular number of bits in an

instance of SPAM meter-monitor format field length token information. (Hereinafter, said third constant number is called "L".)

"length token" ... page 52 line 5 ... each instance of a meter-monitor segment includes a format field that contains information that specifies the particular format of the meter-monitor segment of said instance. Within said field is a particular group of binary information bits (hereinafter, the "length token") that identifies the number of bits in a meter-monitor segment of said format. Each alternate length token has a unique binary information code. The number of information bits in each instance of a length token is the smallest number of bits capable of representing the binary value of the total number of meter-monitor segment bit length alternatives. And the unique code of each different alternative is within the range of binary numbers thus defined.

...

... page 53 line 20 ... In the preferred embodiment, the bits of the length token are the first bits in each meter-monitor segment. ...

## M

"message" ... page 59 line 24 ... All of the information transmitted with a given header is called a "message." Each header begins a message, and each message begins with a header. More specifically, a message consists of all the SPAM information, transmitted in a given transmission, from the first bit of one header to the last bit transmitted before the first bit of the next header.

A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.

"meter command" ... page 48 line 33 ... The preferred embodiment includes ... one command that is addressed to URS signal processors, 200, (hereinafter, the "meter command") but does not instruct said processors, 200, to perform any controlled function. [This command is ] always transmitted with meter-monitor segment data that receiver station apparatus automatically process and record. By transmitting ... meter command signals, transmission stations cause receiver station apparatus to record meter-monitor segment information without executing controlled functions. ... The meter command causes apparatus such as controller, 12, of Fig. 2D to transmit meter information to buffer/comparator, 14, without performing any controlled function.

"meter-monitor field" ... page 50 line 28 ... For each category of [meter information and/or monitor] information, a series of binary bits (hereinafter, a "field" or "meter-monitor field") exists in the meter-monitor segment to contain the [category] information.

meter-monitor segments ... page 44 line 26 ... contain meter information and/or monitor information, and the information of said segments causes subscriber station signal processor systems to assemble, record, and transmit meter records to remote billing stations and monitor records to remote ratings stations in fashions that are described [in many places of the disclosure, especially examples #3, #4 and #5.

...

... page 49 line 27 ... Examples of categories of [meter information and/or monitor] information include:

- meter instructions that instruct subscriber station meter apparatus to record particular meter-monitor segment information and maintain meter records of said information;

- origins of transmissions (eg., network source stations, broadcast stations, cable head end stations);

- dates and times;

- unique identifier codes for each program unit (including commercials);

- codes that identify uniquely each combining in a given combined medium program unit; codes that identify the subject matter of a program unit;

- unique codes for programming (other than programming identified by program unit codes) whose use obligates users to make payments (eg., royalties and residuals); and

- unique codes that identify the sources and suppliers of computer data.

For each category of information, a series of binary bits (hereinafter, a "field" or "meter-monitor field") exists in the meter-monitor segment to contain the information. In any given category such as origins of transmissions, each distinct item such as each network source, broadcast, or cable head end station has a unique binary information code. In the preferred embodiment, the number of information bits in that category's meter-monitor field is the smallest number of bits capable of representing the binary value of the total number of distinct items. And the information code of each distinct item is within the range of binary numbers thus defined. In the preferred embodiment, date and time fields have sixteen bits.

Few commands require meter-monitor information of every information category. Often commands require no more than the identification codes of a specific combined medium program unit and of a specific combined medium combining within said program unit.

Because the amount of information in meter-monitor segments varies from command



to command, in the preferred embodiment more than one format exists at any given time for meter-monitor segment information. ...

Because the number of categories of meter-monitor information varies from one command to the next, the length of meter-monitor segments varies. ...

In the preferred embodiment, each instance of a meter-monitor segment includes a format field that contains information that specifies the particular format of the meter-monitor segment of said instance. Within said field is a particular group of binary information bits (hereinafter, the "length token") that identifies the number of bits in a meter-monitor segment of said format. ...

In the preferred embodiment, each distinct meter-monitor segment format (including each distinct field format) also has a unique binary information code. ...

...  
In the preferred embodiment, the bits of the length token are the first bits in each meter-monitor segment. ...

"MMS" ... page 104 line 7 ... (Hereinafter, the exact number of bits in any given meter-monitor segment is called, "MMS".)

"MMS-L" ... page 103 line 29 ... (Hereinafter, the number of the particular selected bit-length-number alternative associated with any given length token is called "MMS-L" to signify that said number is L bits less than the number bits in the meter-monitor segment in which said length token occurs.)

"MOVE bit" ... page 64 line 1 ... see "EOFS bit"

## N

"normal transmission location" ... page 86 line 12 ... (Hereinafter, the preferred normal location for transmitting signals in any given communication medium is called, the "normal transmission location".)

"null outputs" ... page 159 line 10 ... Among such other outputs is one or more (hereinafter called, "null outputs") with capacity for accepting binary information and merely recording said information at particular memory associated with matrix switch, 39I, thereby overwriting and obliterating information previously recorded at said memory. The purpose of such a null output is to provide means whereby said switch can automatically cause information of any selected SPAM message to be discarded rather than transferred to addressed apparatus.

## O

"original transmission stations" ... page 40 line 31 ... (Hereinafter, stations that originate broadcast

transmissions are called "original transmission stations," ...

## P

"padding bits" ... page 55 line 22 ... particular bits are added at the end of any command that is not already a multiple of the particular signal word bit length that applies in signal processor system communications at the subscriber stations to which said transmission is transmitted. (Hereinafter, said bits are called "padding bits.") Padding bits communicate no command information nor are padding bits part of any information segment. The sole purpose of padding bits is to render the information of any given SPAM command into a bit length that is, by itself, complete for signal processor system communication. Padding bits are added to command information prior to the transmission of said information at said station, and all subscriber station apparatus are preprogrammed to process padding bits. The particular number of padding bits that are added to any given command is the smallest number of bits required to render the bit length of said command into a multiple of said signal word bit length.

"pre-transmission evaluation" ... page 65 line 29 ... To prevent such erroneous processing, in the preferred embodiment, after the initial generation of any given instance of SPAM message information (not including end of file signal information) and before the embedding and transmitting of said instance, said information is transmitted through an apparatus, called an "EOFS valve," that detects end of file signals and is described below. If said valve detects in said information particular information that constitutes an end of file signal, before being embedded and transmitted, the binary information of said instance is rewritten, in a fashion well known in the art that may be manual, to cause substantively the same information processing at subscriber stations without containing an instance of information that is identical to the information of an end of file signal. (Hereinafter, such pre-transmission processing of a message is called a "pre-transmission evaluation.")

"program instruction set" ... page 24 line 16 ... a ... set of [processing] instructions [conveyed in the information segment of a SPAM message] that is loaded and run [at receiver station (including ITS) computing apparatus] ... [at page 42 line 2, the meaning of "program instruction sets" is further defined as ->] (Hereinafter, instances of computer program information that cause ultimate receiver station apparatus to generate and display user specific information are called "program instruction sets.") ... [see also "intermediate generation set"]

"program instruction set of Q" ... page 365 line 18 ... (Hereinafter, the program instruction set generated in example #9, under control of said intermediate generation set of Q, is called the "program instruction set of Q".)

"program instruction set of Q.1" ... page 378 line 23 ... (Hereinafter, the program instruction set generated at the station of Fig. 6 in example #10 is called the "program instruction set of

Q.1", signifying that said set is one version of complete program instruction set information of said instance of the network transmission of Q.)

"program instruction set of Q.2" ... page 380 line 20 ... [Hereinafter, the program instruction set generated at said second station is called the "program instruction set of Q.2", signifying that said set is a second version of complete program instruction set information of said instance of the network transmission of Q.]

"program originating studio" ... page 20 line 29 ... (Hereinafter, a studio or station that originates the broadcast transmission of programming is called the "program originating studio.")

"program unit identification code" ... page 90 line 1 ... (Hereinafter, meter-monitor information that identifies the program unit of a given program may also be called the "program unit identification code".)

"programming" ... page 11 line 7 ... The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming as well as combined medium programming.

"pseudo command" ... page 48 line 31 ... The preferred embodiment includes one appropriate command (hereinafter called the "pseudo command") that is addressed to no apparatus ... [This command is] always transmitted with meter-monitor segment data that receiver station apparatus automatically process and record. By transmitting pseudo command ... signals, transmission stations cause receiver station apparatus to record meter-monitor segment information without executing controlled functions. The pseudo command enables a so-called ratings service to use the same system for gathering ratings on conventional programming transmissions that it uses for combined media without causing combined media apparatus to execute controlled functions at inappropriate times (eg., combine overlays onto displays of conventional television programming).

## Q

## R

"RAM" ... page 23 line 1 ... random access memory

"revoking broadcast control." ... page 513 line 25 ... the steps associated with returning a microcomputer, 205, from broadcast control to local control are called "revoking broadcast control."

"ROM" ... page 31 line 9 ... read only memory

S

second combining synch command ... page 89 line 3 ... Each example focuses on the processing of the three signal messages of the Fig. 1C combining. The information of said messages include three combining synch commands and one program instruction set.

...

... page 90 line 4 The second message is of the information associated with the second combining synch command. [See page 25 line 34 through page 26 line 8 of the specification as well as "combining synch command" above.] Said second command has a "00" header, an execution segment, and a meter-monitor segment of five fields and addresses URS microcomputers, 205. Said second command causes said computers, 205, to combine the Fig. 1A information of each microcomputer, 205, with the information of Fig. 1B and transmit the combined information to monitors, 202M. Each meter-monitor segment field of the second command contains information of one of the following:

- . the subject matter of said "Wall Street Week" program,
- . the program unit of said program,
- . the unique code of said overlay given said program unit information,
- . the minute of said transmission within a particular one month period, and
- . the format of said meter-monitor segment information.

segment ... page 44 line 4 ... Fig. 2E shows one example of the composition of signal information (excluding bit information required for error detection and correction). The information in Fig. 2E commences with a header which is particular binary information that synchronizes all subscriber station apparatus in the analysis of the information pattern that follows. Following said header are three segments: an execution segment, a meter-monitor segment, and an information segment. As Fig. 2E shows, the header and execution and meter-monitor segments constitute a command.

"signal processor" ... page 15 line 8 ... signal processing apparatus defined at page 15, line 8.

"signal processor alternative #1" ... page 34 line 1 ... For certain applications, one particular embodiment (hereinafter, "signal processor alternative #1") can be configured to receive only other inputs at buffer/comparator, 8, in which case said embodiment has no oscillator, 6; switch, 1; mixers, 2 and 3; or decoders, 30 or 40.

"signal processor alternative #2" ... page 34 line 6 ... For other particular applications, another

particular embodiment (hereinafter, "signal processor alternative #2") can be configured to receive only inputs at buffer/comparator, 14, in which case said embodiment has only buffer/comparator, 14; recorder, 16; clock, 18; and the control device apparatus associated with controller, 20.

"signal records" ... page 31 line 34 ... Buffer/comparator, 14, receives signal information that is meter information and/or monitor information from controller, 12, and from other inputs; organizes said received information into meter records and/or monitor records (called, in aggregate, hereinafter, "signal records")

"signal unit" ... page 14 line 26 ... (The term "signal unit" hereinafter means one complete signal instruction or information message unit. Examples of signal units are a unique code identifying a programming unit, or a unique purchase order number identifying the proper use of a programming unit, or a general instruction identifying whether a programming unit is to be retransmitted immediately or recorded for delayed transmission. The term "signal word" hereinafter means ...

"signal word" ... page 14 line 32 ... The term "signal word" hereinafter means one full discrete appearance of a signal as embedded at one time in one location on a transmission. Examples of signal words are a string of one or more digital data bits encoded together on a single line of video or sequentially in audio. Such strings may or may not have predetermined data bits to identify the beginnings and ends of words. Signal words may contain parts of signal units, whole signal units, or groups of partial or whole signal units or combinations.)

signals ... page 40 line 17 ... The signals of the present invention are the modalities whereby stations that originate programming transmissions control the handling, generating, and displaying of programming at subscriber stations.

...

SPAM signals control and coordinate a wide variety of subscriber stations. Said stations include ... "local affiliate" broadcast stations that receive and retransmit single network transmissions; ... "cable system headends" that receive and retransmit multiple network and local broadcast station transmissions; and ... "media centers" in homes, offices, theaters, etc. where subscribers view programming.

...

... page 43 line 32 ... SPAM signals contain binary information of the sort well known in the art including bit information required for error correction using forward error correction techniques, well known in the art, in point to multi-point communications; request retransmission techniques, well known in the art, in point to point communications; and/or other error correction techniques, as appropriate.

Fig. 2E shows one example of the composition of signal information (excluding bit information required for error detection and correction). The information in Fig. 2E commences with a header which is particular binary information that synchronizes all subscriber station apparatus in the analysis of the information pattern that follows.

Following said header are three segments: an execution segment, a meter-monitor segment, and an information segment. As Fig. 2E shows, the header and execution and meter-monitor segments constitute a command.

"SPAM" ... page 40 line 21 ... (The term, "SPAM," is used, hereinafter, to refer to signal processing apparatus and methods of the present invention.)

"specified condition commands" ... page 44 line 33 ... Particular commands (called, hereinafter, "specified condition commands") always contain meter-monitor segments. Said commands cause addressed apparatus to perform controlled functions only when specified conditions exist, and meter-monitor information of said commands specifies the conditions that must exist.

"standard control-invoking value" ... page 285 line 7 ... see "covert control-invoking value"

## T

third combining synch command ... page 89 line 3 ... Each example focuses on the processing of the three signal messages of the Fig. 1C combining. The information of said messages include three combining synch commands and one program instruction set.

...  
... page 90 line 28 The third message is of the information associated with the third combining synch command. [See page 26 line 33 through page 27 line 7 of the specification as well as "combining synch command" above.] Said third command has only a "10" header and an execution segment and addresses URS microcomputers, 205. Said command causes said computers, 205, to cease combining and transmit only the received composite video transmission to monitors, 202M, and to continue processing in a predetermined fashion (which fashion may be determined by the aforementioned program instruction set).

"transparent commands ... page 267 line 34 ... All eight of said messages are commands. The 1st- and 3rd-new-program-message (#5) and the 1st-new-radio-program- message (#5) signals are addressed to microcomputer, 205. Each informs said microcomputer of new programming transmissions to which said microcomputer can tune appropriate station receiver and display apparatus in fashions described below. (Hereinafter said commands are called "guide commands" because they can guide station control apparatus to desired programming.) By contrast, the 1st-, 2nd-, and 3rd-old-program-message (#5) messages, the 2nd-new-program-message (#5), and the 1st-old-radio-program- message (#5) inform no station control apparatus of new programming transmissions because said commands are addressed to no apparatus; the execution segment of each is the aforementioned pseudo-command. (Hereinafter, each said signal is called a "transparent command" because no subscriber station control apparatus "sees" said signal.)

## U

"ultimate receiver stations" ... page 40 line 31, page 40 line 33, and page 40 line 35 ... (Hereinafter, ... stations where subscribers view programming are called "ultimate receiver stations.")

"URS" ... page 45 line 26 ... refers to ultimate receiver station apparatus.

## V

## W

"w-bits information" ... page 103 line 29 ... Said match causes SPAM-controller, 205C, to place particular preprogrammed bit-length-number information at said SPAM-length-info-@205 memory. (Said particular bit-length-number information is called, hereinafter, "w-bits information".) Said information is the precise number of bits, following the last of said L bits, that remain in the meter-monitor segment of the command associated with said length token. Said number is not a preprogrammed constant value such as H, X, and L that is the same for every SPAM command with a meter-monitor segment. Rather, said number is a variable that may differ from one SPAM meter-monitor segment to the next. More precisely, it is, for any given meter-monitor segment, a selected one of several preprogrammed bit-length-number information alternatives.

"W-token information" ... page 103 line 15 ... Automatically SPAM-controller, 205C, compares the information at said SPAM-length-info-@205 memory with preprogrammed token-comparison-@205 information and determines that said information at memory matches particular token-comparison-@205 information (which particular information is called, hereinafter, "W-token information").

"wireless" ... page 248 line 21 ... over-the-air (hereinafter, "wireless")

## X

"X" ... page 96 line 11 ... a second preprogrammed constant number of next bits and record said bits, in their order after conversion, at particular SPAM-exec register memory. Said second constant number is the particular number of bits in a SPAM execution segment. (Hereinafter, said second constant number is called "X".)

Y

Z

## MESSAGES DEFINED IN SPECIFIC EXAMPLES

### EXAMPLE #1

### EXAMPLE #2

"2nd meter information (#2)" ... page 152 line 34 ...

### EXAMPLE #3

"1st monitor information (#3)" ... page 174 line 21 ...

"2nd monitor information (#3)" ... page 190 line 14 ...

### EXAMPLE #4

"1st meter-monitor information (#4)" ... page 213 line 32 ...

"2nd meter-monitor information--second precondition failed--(#4)." ... page 238 line 16 ...

"2nd meter-monitor information (#4)." ... page 239 line 3 ...

"2nd monitor information (#4)" ... page 240 line 40 ...

### EXAMPLE #5

1st command (#5) ... page 251 line 17 ...

"1st-old-program-command (#5)" ... page 252 line 13 ...

"1st-new-program-message (#5)" ... page 253 line 1 ...



"2nd command (#5)" ... page 256 line 5 ...  
"2nd-old-program-message (#5)" ... page 256 line 27 ...  
"2nd-new-program-message (#5)" ... page 257 line 5 ...  
"3rd command (#5)." ... page 259 line 25 ...  
"3rd-old-program-message (#5)" ... page 260 line 12 ...  
"3rd-new- program-message (#5)" ... page 260 line 29 ...  
"4th command (#5)" ... page 263 line 5 ...  
"1st-old-radio-program-message (#5)" ... page 264 line 28 ...  
"1st-new-radio-program-message (#5)" ... page 265 line 9 ...

#### **EXAMPLE #6**

"1st supplementary message (#6)" ... page 281 line 35 ...  
"2nd supplementary message (#6)" ... page 281 line 35 ...

#### **EXAMPLE #7**

please-fully-enable-WSW-on-CC13-at-particular-8:30 information ... page 289 line 28 ...  
"local-cable-enabling-message (#7)" ... page 291 line 19 ...  
"1st-WSW-program-enabling-message (#7)" ... page 297 line 23 ...  
"1st- WSW-decryption-check (#7)" ... page 300 line 15 ...  
"2nd-WSW-program-enabling-message (#7)" ... page 304 line 10 ...  
"2nd-WSW-decryption-check (#7)" ... page 308 line 5 ...  
Prepare-To-Retransmit-WSW message ... page 430 line 35 ...  
Select-WSW-Program-Unit SPAM message ... page 435 line 19 ...

### EXAMPLE #8

"first- network-cue-to-transmit-locally message (#8)" ... page 335 line 30 ...

"first-network-cue-to-transmit-network message (#8)" ... page 335 line 35 ...

"select-A-message (#8)," the "select-B-message (#8)," the "select-C-message (#8)," and so forth up to the "select-Z- message (#8)," each message referring to the corresponding program unit: A, B, C, and so forth up to Z, respectively, and said messages are called collectively the "cue-to-select messages (#8)." ... page 342 line 14 ...

### EXAMPLE #9

"generate-set-information message (#9)" ... page 359 line 3 ...

"first cueing message (#9)" ... page 366 line 27 ...

"align-URS- microcomputers-205 message (#9)" .. Page 368 line 6 ...

"synch-SPAM-reception message (#9)" ... page 368 line 19 ...

"control-invoking message (#9)" ... page 368 line 30 ...

"transmit-data-module-set message (#9)" ... page 369 line 22 ...

"data-module-set message (#9)" ... page 369 line 30 ...

"transmit-and-execute-program-instruction-set message (#9)" ... page 371 line 9 ...

"program-instruction-set message (#9)" ... page 371 line 17 ...

"cease-stripping-and-embedding message (#9)" ... page 372 line 13 ...

"1st commence-outputting message (#9)" ...page 372 line 25 ...

"2nd commence-outputting message (#9)" ... page 372 line 26 ...

"3rd commence-outputting message (#9)" ... page 372 line 27 ...

"1st cease-outputting message (#9)" ... page 372 line 27 ...

"4th commence-outputting message (#9)" ... page 372 line 28 ...  
"5th commence-outputting message (#9)" ... page 372 line 29 ...  
"6th commence-outputting message (#9)" ... page 372 line 30 ...  
"2nd cease-outputting message (#9)" ... page 372 line 30 ...  
"second cueing message (#9)" ... page 373 line 5 ...  
"disband-URS- microcomputers-205 message (#9)" ... page 373 line 22 ...

#### **EXAMPLE #10**

"generate-set-information message (#10)" ... page 377 line 34 ...  
"load-set-information message (#10)" ... page 381 line 23 ...  
"align-URS-microcomputers-205 message (#10)" ... page 382 line 26 ...  
"synch- SPAM-reception message (#10)" ... page 383 line 4 ...  
"control-invoking message (#10)" ... page 383 line 13 ...  
"transmit-data-module-set message (#10)" ... page 383 line 24 ...  
"transmit-and-execute-program-instruction-set message (#10)" ... page 385 line 7 ...  
"program-instruction-set message (#10)" ... page 385 line 14 ...  
"cease-stripping-and-embedding message (#10)" ... page 387 line 9 ...  
"1st commence-outputting message (#10)" ... page 387 line 25 ...  
"2nd commence-outputting message (#10)" ... page 387 line 26 ...  
"3rd commence-outputting message (#10)" ... page 387 line 26 ...  
"1st cease-outputting message (#10)" ... page 387 line 27 ...  
"4th commence-outputting message (#10)" ... page 387 line 28 ...

"5th commence-outputting message (#10)" ... page 387 line 29 ...

"6th commence-outputting message (#10)" ... page 387 line 29 ...

"2nd cease-outputting message (#10)" ... page 387 line 30 ...

"disband-URS-microcomputers-205 message (#10)" ... page 387 line 34 ...

"local-output-cueing message (#10)" ... page 388 line 7 ...

#### **EXAMPLE #11**

first-master-cueing message (#11) ... page 545 line 32 ...

first-national-cueing message (#11) ... page 546 line 3 ...

second-master-cueing message (#11) ... page 546 line 33 ...

transmit-program-instruction-set SPAM message (#11) ... page 547 line 17 ...

local-second-cueing message (#11) ... page 552 line 12 ...

second-cueing message (#11) ... page 554 line 22 ...